PROCEEDINGS

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SOCIETY AFFAIRS

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AMERICAN SOCIETY OF CIVIL ENGINEERS

PROCEEDINGS

VOL. 56 JANUARY, 1930 No. 1

SOCIETY AFFAIRS

COMING ANNUAL MEETING

On January 15, 1930, will be held the 77th Annual Meeting of the Society. In many ways it will resemble other similar meetings, and yet, in many other ways, it will go beyond anything that the Society has attempted in recent years. In every respect it should prove of genuine interest to the many members who make it a point to enjoy the January Sessions.

The awards of Honorary Membership to distinguished members of the Society, followed by the presentation of Medals and Prizes, will add a touch of color to the regular Business Session. After an intermission for lunch in the Engineering Societies Building, the afternoon session will feature reports showing the state of the art of civil engineering in its various branches.

Colorful Ceremony

For the Annual Banquet a special program has been planned. As usual this will take the form of a reception to the new President and to Honorary Members, except that the ceremony will be slightly amplified. One of the main features during the evening will be the award of the John Fritz Medal to a member of the Society with a program in keeping with this illustrious distinction. Notable speeches and responses will feature this part of the program. Finally, the hall will be cleared for dancing until the small hours.

For the Division Sessions, five Divisions are planning meetings on Thursday. The Highway, Power, Construction, and Sanitary Engineering Divisions will hold single sessions, while the Structural Division will meet both morning and afternoon. While these meetings are of a somewhat technical nature, the subjects and treatment will attract a broad interest on the part of the many members in attendance, thus guaranteeing, as usual, a full day, complete in its engineering interest.

The Thursday evening program will have a slightly different character from past years. Three prominent men, representing the business, legal, and banking fields will bring special messages to engineers. During the following Smoker, entertainment of a musical and motion picture variety will be held conjointly in the Auditorium.

Gigantic Bridges

All of Friday, as usual, will be given over to a trip of engineering interest. This will follow the general itinerary of last year, but will show the various important bridge structures in a more advanced state of completion. This will be especially true of the Kill van Kull Arch Bridge, on which construction is well along and the tremendous Hudson River Bridge, on which cable spinning is in operation. Return will be made in time for all those interested to attend alumni meetings. These will be more in number than in any previous year and thus mark an added feature of importance at the Annual Meeting.

Shortly the official program will be in print. The mailing is planned to avoid, if possible, the usual postal rush at Christmas time. Details of all speakers and events will then be available to the entire membership. One important feature of the meeting should not be forgotten—the opportunity for securing reduced railroad fares which will operate even more favorably than in former years to reduce materially the cost of transportation, especially to distant members. If anything further is needed to guarantee the success of the 1930 Annual Meeting, this feature should accomplish it.

ENGINEERING FOUNDATION'S SERVICES IN RESEARCH

Excerpts from Statement by the Chairman, Lewis B. Stillwell, M. Am. Soc. C. E.

United Engineering Society is making an organized effort to increase the endowments of Engineering Foundation and Engineering Societies Library. In view of this fact, some brief observations upon the work of Engineering Foundation may be deemed appropriate.

The Endowment Committee, consisting as it does of practical men, began by asking Engineering Foundation a very practical question, namely: If you had the money what would you do with it? The five "impressive" researches proposed by Engineering Foundation were:

1.—Alloys of Iron Research.
2.—Properties and Life of Wire Ropes in Service.
3.—Use of Small Models for Prediction of Stresses and Strains in Engineering Structures.
4.—Dielectric Properties of Insulating Liquids.
5.—Dielectric and Physical Properties of Impregnated Paper Insulation.

Various Agencies

In the field of engineering research are at work a considerable number of agencies and many thousands of workers. In recent years we have witnessed the gradual evolution of great engineering research establishments developed by manufacturing corporations devoting organized and widely comprehensive efforts to research in their several fields of activity.

To-day, industrial research plays a very large, if not the largest, part in engineering research. It works with definite objectives, large financial resources, and strong incentive to strenuous and systematic effort.

Some Governmental Bureaus, notably the Bureau of Standards, the Bureau of Public Roads, and the Bureau of Reclamation, are carrying on extensive and important engineering research work and are co-operating admirably with other agencies, such as Engineering Foundation, the National Research Council, the universities, and the industries.

Another contributor to progress in engineering research and in the aggregate, a very important one, has been the engineer who, not regarding himself as an inventor and rarely seeking to patent his ideas, nevertheless, has sought to improve practice by adding new methods to precedent.

Further Opportunities

Notwithstanding the many and powerful agencies which in recent years especially have so greatly accelerated material progress, there are to-day problems of the greatest importance in plain sight and awaiting solution. Engineering Foundation and the Research Committees of the Engineering Societies are in a peculiarly favorable position to attack them.

There are approximately 60 000 professional engineers in the ranks of the Founder Societies to-day. Many of them are among the leaders in the work of Governmental Bureaus and in the scientific and engineering departments of the universities.

Recognizing the opportunity, the leading Engineering Societies of the country have established research committees and already have an impressive list of accomplishments to their credit. The spirit of co-operation is generally admirable and the willingness of many of their leaders to give their time and earnest attention to the work of the research committees and of special committees appointed to study specific problems has been demonstrated repeatedly. What these committees have accomplished, however, while considerable in itself, is little compared to what might have been done had it been possible for them to bring to bear upon their research problems the continuous or even closely consecutive attention of selected minds best qualified to find the answer.

The profession is deeply indebted to the able men who have served and are serving on these committees and who are giving of their time, their ability, and their experience. It cannot be expected, however, that a busy man primarily and quite properly interested in earning a living and achieving personal success should give to the work of a committee anything like the hard-driving consecutive attention which he gives and must give to work which he is paid to do.

Full-Time Effort Required

In the majority of cases the effective prosecution of engineering research is best assured if the committee in charge of an investigation can select competent men, secure for them the necessary facilities and assistance, and place them in a position to give their entire time, or a substantial and definite part of it, to the work.

The attitude of the university authorities is highly sympathetic. Many of them stand ready to provide excellent

facilities in laboratory equipment. Graduates and upper class students are available as volunteer assistants. All these resources of special knowledge, skill, enthusiasm, and facilities can be brought to bear upon selected engineering problems if Engineering Foundation can secure a relatively modest financial endowment, such as the Founder Societies are endeavoring to provide through the efforts of United Engineering Society and the Committee on Endowment which it has organized.

Engineers to-day generally recognize the fact that although individually we must specialize to a greater or less extent, there is no department of engineering activity which does not affect us all. They recognize also that no hard and fast boundaries delimiting the fields of activity in which each of the great Societies is primarily interested can be drawn. What each Society may regard as its special field overlaps in every case with that of one or more of the other Societies. It was a logical necessity, therefore, that the Founder Societies sooner or later should organize a committee or board representing them collectively and charged with the responsibility of coordinating and promoting the work of the Societies in engineering research.

The Founder Societies, through their respective research committees and Engineering Foundation, are working together in a spirit of the most friendly and helpful co-operation. This extends beyond the Societies and includes other National scientific and engineering organizations, notably the National Research Council and the American Chemical Society.

Methods of Engineering Foundation

It is not the policy of the Foundation to attempt to dictate to any Engineering Society what work its research committee shall undertake or how it shall be prosecuted. On the contrary, it desires to encourage to the utmost the self-reliance and emulous ambition of the research committees. These committees backed by their governing boards are in position to select and utilize the best ability and experience of their respective Societies. Their resources of personnel are great and they are in position to make these resources effective by securing financial aid not only from Engineering Foundation, but from men who may prefer to assist a favorite Society rather than contribute to a general research fund.

Within the limits of its available income, Engineering Foundation is supporting and supplying funds for approved projects proposed by any of the Founder Societies. If the project is of unusual magnitude, the Foundation stands ready to co-operate with the Society in the endeavor to select the most competent committee available as well as in the effort to secure necessary funds.

Procedure

Any member of a Founder Society, or, in fact, any one who may encounter an engineering problem calling for research, may bring it to the attention of the agencies established by the Founder Societies. He may present his problem to the Research Committee of one of the Societies or he may bring it directly to the attention of Engineering Foundation.

In the former case, it will be considered first by the Research Committee of the Society which he may select. If that Committee approves the proposed investigation, it may undertake the necessary research on its own responsibility, or it may invite the co-operation and assistance of Engineering Foundation. If it asks an appropriation from Engineering Foundation, the Board will consider the project and form its own judgment of the objective sought and of the means available for attaining that objective. This double scrutiny is a safeguard of value especially in view of the necessity of selecting for the expenditure of time and money a practicable number of the most promising projects among the many which are brought to the attention of the Board. If approved, appropriations will be made within the limit of funds available, bearing in mind the apparent merit of the specific project as related to others under consideration at the time.

As an alternative, the engineer who desires to propose a research may bring it directly to Engineering Foundation. In this case, it is first considered by the Board which is in position to ask, and when deemed necessary does ask, advice from the most competent sources available, and, if its decision is favorable, it is the practice of the Board to invite the Society most interested to sponsor the research individually or jointly with Engineering Foundation.

ANOTHER ENGINEER PRESIDENT

Few accounts of the recent election of Pascual Ortiz Rubino as President of Mexico have failed to mention that he is an engineer and thus belongs to the same profession as President Hoover. These two notable choices in adjoining Republics cannot be considered as purely

accidental. The temperamental fitness of engineers for the strenuous duties of government was widely acclaimed a year ago. This second similar selection has the earmarks of a (so-to-speak) confirmation of National judgment in the United States.

To those who are familiar with engineers and engineering it cannot seem strange that the qualities which have produced railroad presidents, leaders of industry, and managers of huge construction enterprises are the same characteristics that are needed for intelligent leadership in government. All engineers will unite in the wish that Senor Ortiz Rubio will realize in his administration the high motives and ideals of his profession.

FIFTIETH ANNIVERSARY

During the coming spring one of the Founder Societies, the American Society of Mechanical Engineers, will commemorate in a fitting manner the fiftieth year of its activities. In many ways the present celebration will duplicate the original event in 1880. For example, from the offices of *The American Machinist*, in New York, the celebration will move to Stevens Institute, in Hoboken, N. J., both these places having been represented in the original steps of the founding of the Society.

Further meetings will take place in New York City and, finally, in Washington, D. C., where an extensive program is planned, occupying several days.

Contacts between the Civil and Mechanical Societies are close, with many members in common. Beyond such physical bonds, all engineers must feel gratified with the success of any one branch or group, especially when such success marks real progress. The American Society of Mechanical Engineers does well to give due emphasis to such a notable anniversary.

APPOINTMENTS OF SOCIETY REPRESENTATIVES

Among the recent appointments to represent the Society may be noted the following:

American Association for the Advancement of Science, Annual Meeting, December 27, 1929: O. M. Leland, M. Am. Soc. C. E.

American Standards Association, Sectional Committee on Drainage of Coal Mines: H. S. Smith and Charles Enzian, Members, Am. Soc. C. E.

JAPANESE CONGRESS

Early reports and publications, depicting the various activities of the World Engineering Congress at Tokyo, Japan, in late October and early November, show the unusually interesting atmosphere surrounding this international gathering. As delegates and guests return, these entertaining accounts multiply. They show that the advance expectations were more than realized in actuality. From its social, no less than its technical, aspects, this was indeed a notable meeting. It is to be hoped that each visitor to the World Engineering Congress may broadcast to all members in his vicinity this story and thus spread in an intimate way the benefits from such a splendid experience.

Local Sections*

Central Illinois.—December 3, 1929. The Annual Meeting of the Section was held at the Inman Hotel, Champaign, Ill., and was preceded by a dinner. The following officers were elected: President, G. W. Pickels; Vice-President, J. J. Woltmann; and Secretary-Treasurer, N. D. Morgan. An illustrated lecture on "Structural Forms and Their Relation to Architecture" was presented by Professor Rexford Newcomb.

Central Ohio.—November 14, 1929. Following the business meeting of the Section, J. M. Weed, Assistant Director of the Engineering Experiment Station at Ohio State University, gave an entertaining and instructive talk on "The Aims and Accomplishments of the Station". Attendance 30.

Colorado.—November 13, 1929. The meeting was held at the Denver Athletic Club, at Denver, following a dinner. President Ivan E. Houk introduced the speaker of the evening, H. M. Westergaard, Professor of Structural Engineering at the University of Illinois. Professor Westergaard presented an illustrated talk on "Stresses in Concrete Bridge Slabs". Following the address the subject was discussed by several of the members present. Attendance 30.

Dayton.—November 11, 1929. A noon-day meeting of the Section, held at the Engineers' Club, was devoted to a general discussion of the recent report on "Charges and Method of Making Charges for Professional Services." The discussion was led by Messrs. Charles H. Paul, F. J. Cellarius, and C. D. Putnam, and participated in by others present. Attendance, 35.

Detroit.—December 3, 1929. The meeting of the Section was held at the Detroit Engineering Society's Clubhouse and was preceded by a dinner. An interesting address by the Hon. O. R. Fleming, President of the Canadian Deep Waterways Association, of Windsor, Ont., Canada, on "The St. Lawrence Deep Waterway", was presented. In the course of his talk Mr. Fleming discussed the economic, the political, and international aspects of the problem from the Canadian viewpoint. Attendance 44.

Duluth.—June 17, 1929. This was a regular business meeting of the Section at which President Hokanson and Past-President J. A. Noyes of the Duluth Engineers Club, were present as guests.

July 15, 1929. An address was presented by Mr. J. H. Darling on the subject of "Recent Failures of Steel Cables of Suspension Bridges at Detroit, Mich., and in Rhode Island."

August 19, 1929. After the business of the regular meeting of the Section was transacted, an interesting report of the Annual Convention of the Society held at Milwaukee, Wis., was made by Mr. A. C. Giesecke, the Section Delegate to the Local Sections' Conference.

September 16, 1929. At this meeting Mr. A. C. Giesecke presented the second part of his talk on "Flood Control of the Mississippi River." The first part of this address was given at the May meeting.

October 21, 1929. This meeting was given over to a discussion of the report of the Society's Special Committee on Charges and Method of Making

* For list of Local Section Officers, Rules, etc., see 1929 Year Book, p. 46.

Charges for Professional Services, by Mr. Lyonel Ayres and others. C. D. Weller, Resident Engineer, described the raising of the 390-ft. top span of the Aerial Bridge across the Ship Canal entrance to Duluth-Superior Harbor, by the Kansas City Bridge Company. The bridge is being converted into a vertical lift span type to provide a larger service capacity.

Georgia.—November 4, 1929. A short business session was held at the regular meeting of the Section at the Atlanta Athletic Club. Various committee reports and communications were read, at the conclusion of which a motion picture film entitled "Hydro-Electric Production in the New South" was shown. Mr. Fred J. Merrick, of the E. I. DuPont de Nemours Company, gave a brief explanation of the picture. Attendance 43.

December 2, 1929. The regular monthly meeting of the Georgia Section was held at the Atlanta Athletic Club, Atlanta, Ga. The following officers were elected: President, W. A. Hansell; Vice-President, C. C. Whitaker; Vice-President, Frederick W. Altstaetter; and Secretary-Treasurer, J. A. Higgs. Following brief talks by Messrs. Hansell and Whitaker, the meeting was addressed by Mr. C. C. Whitaker on "The Traffic Survey Recently Completed for the City of Atlanta". Attendance 19.

Illinois.—November 4, 1929. A luncheon preceded a noon-day meeting of the Section held in the club rooms of the Chicago Engineers' Club. An informal report on the subject of "Charges and Method of Making Charges for Professional Services" was read by Mr. Paul Hansen. A discussion of the report concluded the meeting. Attendance 29.

Iowa.—November 21, 1929. At the Annual Meeting of the Section the following officers were elected: President, Q. C. Ayres; Vice-President, W. J. Schlick; Secretary-Treasurer, R. B. Kittredge; and Director, C. C. Williams. A report of the Local Section Conference in Milwaukee, Wis., was given by Secretary Kittredge, and the work of the Iowa State College Student Chapter and the State University of Iowa Student Chapter was reported on by their Presidents, J. G. Strohbehn and C. D. Mullinex, respectively. This was followed by a discussion of the report of the Special Committee on Charges and Method of Making Charges for Professional Services, which was led by Dean C. C. Williams. President Marston addressed the meeting informally on the activities of the Society. The business session was followed by a dinner, after which an address on "Present Day Engineers and Engineering Problems" was made by President Marston. Attendance at the afternoon session, 25; at the dinner, 38.

Kansas City.—November 1, 1929. A meeting of the Section was held at the University Club in Kansas City. Following a dinner, Mr. Malcolm Lowry, of the firm of Henrici-Lowry, Consulting Engineers, gave an interesting talk in which he described his various experiences on a recent trip through Russia. Attendance 33.

Kansas (State).—November 25, 1929. The meeting of the Section was held at the Jayhawk Hotel, Topeka, Kans., and was preceded by a dinner. The guest of honor and the principal speaker was President Anson Marston.

Other guests were present, including members of the Student Chapters of Kansas University and the Kansas State Agricultural College. Attendance 56.

Los Angeles.—November 13, 1929. At the regular meeting of the Los Angeles Section held at the Engineers Club, David C. Moore, Vice-President of the University of Finance, opened the program with an appeal to the Engineer to assert himself and to strive for his rightful place in the economic life of the nation. John C. Shaw, City Engineer of Los Angeles, and the heads of each of the Departments in his Office, presented brief addresses on "Organization and Activities of the Los Angeles City Engineer's Office."

Northwestern.—November 19, 1929. This was a Joint Meeting of the Northwestern Section with the Minneapolis and St. Paul Engineers' Clubs. Mr. Gardner S. Williams outlined the history of the formation of Engineering Council, the objectives of that organization, and some of its accomplishments. After extending the greetings of the American Society of Civil Engineers, President Anston Marston summarized briefly transportation development in the United States in the last forty years, waterways improvement, sewage disposal, and problems of irrigation, power, and flood prevention.

Philadelphia.—October 31, 1929. The regular meeting of the Philadelphia Section was held at the Engineers Club, and was preceded by a dinner. The subject of the meeting was "The Philadelphia Airport at Hog Island". R. H. Horton, Executive Director, Philadelphia Business Progress Committee, spoke on "The Plans for the Airport" and showed slides of the proposed development. The airports in the vicinity of Philadelphia were discussed by S. P. Eckert, Chairman of the Aviation Section, Regional Planning Federation, and C. Townsend Ludington, President of the Company operating the present City Airport near Hog Island, who is also Chairman of the Board of the Central Airport at Crescent Circle at Camden, N. J., read a paper on "The Proposed Plans of the Philadelphia Airport and Their Relation to Other Airports in the City." Attendance at the dinner, 68; at the meeting, 95.

November 21, 1929. This meeting, which was held at the Engineers Club, was preceded by a dinner. A paper on "The Construction of the Lincoln Building, New York City" was presented by Mr. F. O. Dufour, who illustrated his remarks with lantern slides and motion pictures showing the demolition of the old building on the site and various stages in the construction of the new building. Attendance at the dinner, 65; at the meeting, 80.

Porto Rico.—November 16, 1929. This was the organization meeting of the Section, at which the following officers were elected: President, Manuel V. Domenech; Vice-President, William H. Crago; Vice-President, Carlos del Valle Zeno; Fifth Member, Antonio S. Luchetti-Otero; and Secretary-Treasurer, Reinaldo Ramirez.

Sacramento.—September 24, 1929. "The Water Supply of Sacramento" was discussed by Messrs. Robert T. Devlin, John W. Scott, and Albert Givan. Attendance, 42.

October 1, 1929. Mr. E. M. Seel, of the Pacific Gas and Electric Company, addressed the meeting on "Two Major Construction Activities of the Pacific Gas and Electric Company." Motion pictures were shown of the 250-

mile, high-pressure, natural gas pipe line recently completed to San Francisco, and of the Salt Springs Dam now under construction on Mokelumne River. Attendance, 53.

October 8, 1929. This was the Sixth Annual Ladies' Day held by the Section. Dr. B. M. Wood, Assistant Dean of the University of California, gave an illustrated talk on "The Airplane and Its Relation to Long Distance Travel." Attendance, 90.

October 15, 1929. Mr. A. N. Burch, presented a paper on "Financing of Irrigation Districts." Attendance 31.

October 22, 1929. "Rural Fire Fighting" was the subject of a talk by J. P. Fairbank, Extension Specialist in Agricultural Engineering, University of California, and the U. S. Department of Agriculture. Attendance, 43.

October 29, 1929. A motion picture entitled "The Age of Riveted Steel" was shown to the 50 members and guests present.

November 5, 1929. An address on the subject of "Nails" was presented by President Joseph W. Gross of the Section. Attendance, 43.

November 12, 1929. "The Japanese Earthquake of 1923" was the subject of an illustrated address by Mr. H. M. Hadley, of Seattle, Wash. Attendance, 48.

November 19, 1929. A paper on "The Part Which the Department of Materials and Research plays in the Construction of a Modern Highway," was read by Mr. T. E. Stanton, Jr. Attendance, 42.

November 26, 1929. Professor C. B. Wing, Chief of the Division of Parks of the State Department of Natural Resources, presented an illustrated address on the work of his Department. Attendance, 47.

St. Louis.—November 25, 1929. At the Annual Meeting held in St. Louis the following officers were elected for the coming year: President, W. W. Horner; First Vice-President, F. W. Green; Second Vice-President, W. J. Burton; Secretary-Treasurer, R. A. Willis; Councillors, J. C. Pritchard and E. B. Fay; Alternate Councillor, H. F. Thomson.

San Francisco.—October 15, 1929. Following a dinner at the Engineers Club, the meeting of the Section was called to order by President I. C. Steele. Various business matters of the Section were transacted, including a report on the Excursion to Suisun Bay Bridge of the Southern Pacific Company on September 14, 1929, and the election of Mr. Harold B. Hammill as Secretary-Treasurer. Following the business meeting, Dr. W. W. Campbell, President of the University of California, presented an interesting address on "The Nebulae" which was illustrated with many lantern slides showing star pictures made by the Lick Observatory. Attendance at the dinner 130; at the meeting, 140.

Student Chapters*

Cooper Union.—November 19, 1929. At the first regular meeting of the year, President George De Long Champlin reviewed briefly the Fall Meeting of the Society held in Boston, Mass. President Champlin's talk was followed by one of the Student Chapter Lectures on "The Conowingo Hydro-Electric Development", which was illustrated with lantern slides.

* For list of Student Chapters, Officers, etc., see 1929 Year Book, p. 52.

Engineering Societies Library

The services of the Engineering Societies Library are available to all members who wish searches, copies, translations, etc., or advice on technical literature. A collection of modern books is also available for loan to members in North America, at moderate rentals. Correspondence should be addressed to the Director, Engineering Societies Library, 29 West 39th Street, New York, N. Y., who will gladly give information concerning the charges for the various kinds of work. A more comprehensive statement in regard to this matter will be found on pages 73 and 74 of the Year Book for 1929.

Book Notices*

(November 1 to November 30, 1929)

Balkenbrücken. By W. Gehler. (Handbuch für Eisenbetonbau, Edited by F. Emperger. Third Edition. Vol. 6, Lief. 1.) Berlin, Wilhelm Ernst & Sohn, 1929. 96 pp., illus., diagrams, 10 x 7 in., paper. 6,80 r.m.

This pamphlet contains the first chapter of the volume on girder bridges in Emperger's Handbuch für Eisenbetonbau. It deals with the general arrangement, basic forms of girders used in practice, and the esthetics of design.

Canals and Inland Waterways. By George Cadbury and S. P. Dobbs. (Pitman's Transportation Library.) N. Y., Isaac Pitman & Sons, 1929. 160 pp., illus., map, 9 x 6 in., cloth. $2.25.

This text on transportation defines the place of the canal in a National system in competition with roads and railroads. Attention is given chiefly to conditions in Great Britain, and other European countries.

City Planning. Edited by John Nolen. Second Edition. N. Y. & Lond., D. Appleton & Co., 1929. 513 pp., illus., maps, plans, 8 x 5 in., cloth. $3.50.

These carefully related essays by sixteen authorities cover the essential elements of a city plan. The best practice in investigation, planning, and control is discussed, with new chapters on zoning and regional planning.

Construction of Roads and Pavements. By Thomas Radford Agg. Fourth Edition. N. Y., McGraw-Hill Book Co., 1929. 511 pp., illus., diagrams, tab., 9 x 6 in., cloth. $4.00.

These fundamental principles provide a basic course in highway engineering. The theory of design and economic considerations are emphasized.

Erddruck Futter- und Stützmauern. By Felix Kann. Berlin, Walter de Gruyter & Co., 1929. 121 pp., illus., diagrams, 6 x 4 in., cloth. 1,50 r.m.

The classic theory of earth pressure and its modern extensions are reviewed, also the calculation and construction of retaining walls, with practical examples.

Highway Curves. By Howard Chapin Ives. N. Y., John Wiley & Sons, 1929. 247 pp., diagrams, tab., 7 x 4 in., fabrikoid. $3.50.

This presents American practice of highway curves, including comprehensive tables and the standards of the various State highway commissions.

Ingenieurgeologie. By K. A. Redlich and others. Wien u. Berlin, Julius Springer, 1929. 708 pp., illus., tab., 10 x 7 in., bound. 57.-r.m.

This comprehensive text on engineering geology, emphasizes the subjects of special importance to engineers, such as the technical investigation of stone, the properties of soils, the geology of tunnels, landslides, and subsidences, bearing strength of soils, dam foundations, foundations on marshy ground, ground-water, and changes in land due to water.

Mechanical Equipment of Buildings, Vol. 1: Heating and Ventilation. By Louis Allen Harding and Arthur Cutts Willard. Second Edition. N. Y., John Wiley & Sons, 1929. 963 pp., illus., tab., 9 x 7 in., fabrikoid. $10.00.

This comprehensive reference book for the designer of heating and ventilating plants for buildings of all kinds, has been thoroughly revised, with new material added throughout.

* The statements made in these notices are taken from the books themselves, and this Society is not responsible for them. Unless otherwise specified, the books in this list have been donated by the publishers.

Mitteilungen des Hydraulischen Instituts der Technischen Hochschule München. Heft 3. Edited by D. Thoma. Münich u. Berlin, R. Oldenbourg, 1929. 163 pp., illus., diagrams, tab., 11 x 8 in., paper. 12,-r.m.

These hydraulic research reports include investigations of sources of error in overflow measurements, the design of the Thoma return-current brake, the loss in right-angled bends, friction in transversely lapped pipe, the lubricating value of oils, and the influence of the viscosity of water on the efficiency of a small Francis turbine.

Water Supply Engineering. By Harold E. Babbitt and James J. Doland. N. Y., McGraw-Hill Book Co., 1929. 776 pp., illus., diagrams, tab., 9 x 6 in., cloth. $6.00.

This text presents a systematic survey of the whole field of water supply engineering. The work is an admirable statement of fundamentals and practical procedure, and forms a basis for further study of special questions.

Additions to the Reading Room

Bridges: A Study in Their Art, Science, and Evolution. By Charles S. Whitney, M. Am. Soc. C. E. New York, William Edwin Rudge, 1929. 363 pp., illus., diagrams, 12 x 9 in., cloth. $20.00.

This book presents three phases: Method for applying fundamental architectural principles to the design and criticism of bridges; the historical background of the modern bridge; and photographic examples of artistic bridges of all types, not only of interest to the layman, but valuable as inspiration to designers.

L'Enfant and Washington, 1791-1792. By Elizabeth S. Kite. (Historical Documents. Institut Français de Washington, Cahier III.) Balt., The Johns Hopkins Press, 1929. 12 + 182 pp., illus., 10½ x 7¾ in., cloth. $3.00.

This book contains many published and unpublished documents covering the life of Major L'Enfant who planned the City of Washington, which plan is now being put into effect. In addition, a number of historic letters from Major L'Enfant to General Washington and Thomas Jefferson and from them to him are given and explained.

The Engineer and the Intellectual Life. By Palmer C. Ricketts, M. Am. Soc. C. E. (Rensselaer Polytechnic Inst., Eng. and Science Series, No. 25.) Troy, N. Y., The Institute, 1929. 8 pp., 9 x 6, paper.

In this pamphlet, which is reprinted from the Magazine Section of the *New York Herald-Tribune* of September 8, 1929, Dr. Ricketts discusses the broadening influence of scientific knowledge on human capacity for intellectual work, thereby adding something to the intellectual life.

Our Cities To-Day and To-Morrow: A Survey of Planning and Zoning Progress in the United States. By Theodora Kimball Hubbard and Henry Vincent Hubbard. Cambridge, Harvard University Press, 1929. 407 pp., illus., maps, diagrams, 10 x 7 in., cloth.

As a result of studies covering 120 American cities and regions, this book offers a bird's-eye view of municipal progress and pictures the background of a new social movement.

The Story of the Baltimore & Ohio Railroad, 1827-1927. By Edward Hungerford. N. Y.-Lond., G. P. Putnam's Sons, 1928. 2 v., illus., tab., 9½ x 6½ in., cloth.

These volumes contain the interesting story of the development and detailed history of one far-reaching American railway enterprise, with comments as to the effect of that record on the life and growth of the communities through which the line passes.

Suspension Bridge Analysis by the Exact Method Simplified by Knowledge of Its Relations to the Approximate Method. By Arvid H. Baker, Jun. Am. Soc. C. E. (Rensselaer Polytechnic Inst., Eng. and Science Series, No. 24.) Troy, N. Y., The Institute, 1928. 32 pp., illus., tab., 9 x 6, paper.

The author's aim in this thesis is the reduction to a minimum of the analysis of the stiffening trusses of suspension bridges by a set of correction charts for use in preliminary design and estimates.

Tales of Squares. By John L. Hall, M. Am. Soc. C. E. Third Edition. Seattle, Wash., John Lincoln Hall, 1929. 115 pp., 5¾ x 3¾ in., leather.

This revised volume contains the true square of every foot and fractions thereof from 0 to 100 ft., advancing by 1/16 in. up to 1 ft., together with two tables of the decimal parts of a foot. It is of especial use to bridge and structural draftsmen.

Current Civil Engineering Literature

Key to Abbreviated References to Publications Indexed*

Abbreviated References.	Publication.	Place.
Am. C. Inst.	*American Concrete Institute, Proceedings* (Y.)	Detroit
A. I. E. E.	*American Institute of Electrical Engineers Journal* (M.)	New York
A. R. E. A.	*American Railway Engineering Association, Proceedings* (Y.)	Chicago
A. S. T. M.	*American Society for Testing Materials, Proceedings* (Y.)	Philadelphia
Am. Soc. C. E.	*American Society of Civil Engineers, Proceedings* (M.)	New York
Am. Soc. Mun. Impvts.	*American Society for Municipal Improvements, Proceedings* (Y.)	New York
Am. W. W. Assoc.	*American Water Works Association, Journal* (M.)	Baltimore
Am. Wood Prs. Assoc.	*American Wood Preservers Association, Proceedings* (Y.)	Chicago
Ann. P. et C.	*Annales des Ponts et Chaussées* (Bi-M.)	Paris
Ann. T. P. Belg.	*Annales des Travaux Publics de Belgique* (Bi-M.)	Brussels
Assoc. Ing. Gand.	*Annales de l'Association des Ingénieurs sortis des Ecoles Spécials de Gand* (Q.)	Ghent
Bost. Soc. C. E.	*Boston Society of Civil Engineers, Journal* (M.)	Boston
Can. Engr.	*Canadian Engineer* (W.)	Toronto
City Plan.	*American City Planning Institute* (Q.)	Boston
Comwlth. Engr.	*Commonwealth Engineer* (M.)	Melbourne
Conc.	*Concrete* (M.)	Chicago
Cornell C. E.	*Cornell Civil Engineer* (M.)	Ithaca
Dock & Harbour	*Dock and Harbour Authority* (M.)	London
Eng.	*Engineering* (W.)	London
Eng. & Contr.	*Engineering and Contracting* (M.)	Chicago
Eng. Inst. Can.	*Engineering Institute of Canada, Journal* (M.)	Montreal
Eng. N. R.	*Engineering News-Record* (W.)	New York
Engr. Soc. W. Pa.	*Engineers' Society of Western Pennsylvania, Journal* (M.)	Pittsburgh
Engr.	*Engineer* (w.)	London
Engrs. & Eng.	*Engineers and Engineering, Engineers' Club of Philadelphia* (M.)	Philadelphia
Gas und Wasser.	*Gas und Wasserfach*	Munich
Gen. Civ.	*Le Génie Civil* (W.)	Paris
Gesund. Ing.	*Gesundheits Ingenieur* (W.)	Munich
Hydraulic Eng.	*Hydraulic Engineering* (M.)	Los Angeles
Inst. C. E.	*Institution of Civil Engineers Minutes of Proceedings* (Q.)	London
Inst. Mun. & Co. Engrs.	*Institution of Municipal and County Engineers, Journal* (W.)	London
Int. Ry. Cong. Assoc.	*International Railway Congress Association, Bulletin* (M.)	Brussels
Land. Arch.	*Landscape Architecture* (Q.)	Boston
Mech. Eng.	*Mechanical Engineering* (M.), *Journal of the American Society of Mechanical Engineers*	New York
Mil. Engr.	*Military Engineer* (Bi-M.)	Washington
Min. & Metal.	*Mining and Metallurgy* (M.), *American Institute of Mining Engineers*	New York
N. E. W. W. Assoc.	*New England Water Works Association, Journal* (Q.)	Boston
N. Y. R. R. Club	*New York Railroad Club, Proceedings* (M.)	Brooklyn
Oest. Ing. Arch. Ver.	*Oesterreichischer Ingenieur und Architekten Verein, Zeitschrift* (F.)	Vienna
Power	*Power* (W.)	New York
Public W.	*Public Works* (M.)	New York
Rev. Gen.	*Revue Générale des Chemins de Fer* (M.)	Paris
Ry. Age	*Railway Age* (W.)	New York
Ry. Eng. & Main.	*Railway Engineering and Maintenance* (M.)	Chicago
R. & S.	*Roads and Streets* (M.)	Chicago
Schw. Bauz.	*Schweizerische Bauzeitung* (W.)	Zurich
Sci. Am.	*Scientific American* (M.)	New York
Soc. Ing. Civ. Fr.	*Société des Ingénieurs Civils de France, Mémoires et Comptes Rendus* (Q.)	Paris
Tech. Gemein.	*Technisches Gemeindeblatt* (F.)	Berlin
Ver. deu. Ing.	*Verein deutscher Ingenieure, Zeitschrift* (W.)	Berlin
W. W. & Sewer.	*Waterworks and Sewerage* (M.)	Chicago
West. Constr. N.	*Western Construction News* (F.)	San Francisco
West. Ry. Club	*Western Railway Club, Proceedings* (M.)	Chicago
West. Soc. Engrs.	*Western Society of Engineers, Journal* (M.)	Chicago
Zeit. Bau.	*Zeitschrift für Bauwesen* (Q.)	Berlin
Z. d. Bauver.	*Zentralblatt der Bauverwaltung* (W.)	Berlin

* Y = Yearly; Q = Quarterly; M = Monthly; F = Fortnightly; W = Weekly.

A. Applied Sciences

a. Processes of Calculation

2. Graphical and Nomographical Processes

Nomogramm zur Ermittlung von Trägheitsmomenten.* (Nomogram for Determining Moments of Inertia.) Arthur Spiegler. Oest. Ing. Arch. Ver. Oct. 25, '29.

3. Stresses and Strains

Problems Concerning Elastic Stability in Structures. Discussion: A. Nadai. Am. Soc. C. E. Nov. '29.

B. Applied Mechanics

a. Mechanics of Solids (Strength of Materials)

4. Riveted Systems

Inferior Structural Steelwork.* A. W. A. Eden. Eng. N. R. Nov. 14, '29.

6. Heterogeneous Solids (Reinforced Materials)

Studies of Shear in Reinforced Concrete Beams. Discussion: P. Wilhelm Werner. Am. Soc. C. E. Nov. '29.

b. Hydraulics

2. Physical Hydraulics

Strömung des Wassers in konvergenten und divergenten Kanälen.* (Flow of Water in Convergent and Divergent Channels.) I. Nikuradse. Ver. Deu. Ing. Oct. 5, '29.

3. Industrial Hydraulics

The Conowingo Hydro-Electric Development.* Eng. Serial beginning Oct. 25, '29.

Largest Hydro-Electric Plant of the Orient Being Built in Chosen, China.* Taneyuki Matsumura. Eng. N. R. Oct. 31, '29.

Automatic Roof Weirs Used for Reservoir Control on Guadalupe River.* E. L. Chandler. Eng. N. R. Oct. 31, '29.

Niagara Power.* Discussion: Thomas H. Hogg, Frank M. Williams, Charles Keller, and William Kelly. Am. Soc. C. E. Nov. '29.

Das Kraftwerk Kardaun am Eisack.* (The Kardaun Power Plant on the Eisack.) Schw. Bauz. Oct. 5, '29.

Wasserkraftanlage am Shannon-River, Irland.* (Hydraulic Power Plant on the Shannon River, Ireland.) Schw. Bauz. Oct. 19, '29.

4. Dams

Long Period Settlement Records of Two Earth Dams.* J. Albert Holmes. Eng. N. R. Nov. 14, '29.

C. Materials of Construction and General Process

a. Lime, Cement, Mortar, Concrete, Brick, Bitumin, Timber, etc.

Aus neueren Versuchen mit Zement, Zementmörtel und Beton.* (Recent Experiments with Cement, Cement Mortar and Concrete.) Otto Graf. Ver. deu. Ing. Sept. 28, '29.

b. Metals

Anomalies Dilatométriques de Quelques Aciers Extra-Doux après un Chauffage Spécial.* (Dilatometric Abnormalities of Some Extra-Soft Steels after Special Heating.) J. Seigle. Gen. Civ. Oct. 12, '29.

Les Qualités des Aciers à Haute Température et Leurs Emplois à la Nouvelle Chaufferie de la Centrale d'Issy-les-Molineaux.* (The Properties of High-Temperature Steels and Their Use in the New Heating Plant of the Issy-les-Molineaux Central Station.) Ch. Galatoire-Malégarie. Gen. Civ. Oct. 19, '29.

c. Preservation and Use of Materials, Painting, Waterproofing

How to Avoid Poor Concrete.* Ry. Eng. & Main. Oct. '29.

Neuzeitlicher Oberflächenschutz.* (Modern Surface Protection.) Rudolf Schuhmann. Oest. Ing. Arch. Ver. Oct. 11, '29.

Verwitterungserscheinungen an Wiener Monumentalbauten.* (Weathering Indications on Viennese Monumental Constructions.) Alois Kieslinger. Oest. Ing. Arch. Ver. Oct. 11, '29.

Schutz eiserner Tragwerke durch Anstriche. (Protection of Iron Supporting Beams by Paints.) Franz Gebauer. Oest. Ing. Arch. Ver. Oct. 11, '29.

f. Rock Excavation, Mining, Rock Removal

Abstracts of Institute Publications. Min. & Metal. Oct. '29.

Les Méthodes Modernes pour la Mise en Valeur des Mines Métalliques. La Laverie de Minerais Complexes de l'Orb (Hérault).* (Modern Methods of Making Metal Mines Pay. The Washer for Complex Orb Ores.) (Hérault) Ch. Berthelot. Gen. Civ. Oct. 26, '29.

Druckluft als Antriebmittel in Steinkohlenbergwerken.* (Compressed Air as Motive Power in Coal Mines.) A. Grumbrecht. Ver. deu, Ing. Oct. 19, '29.

g. Execution of Works, Specifications

2. Of Concrete

Deterioration of Concrete in Hydraulic Structures. Axel Ekwall. (From report of Swedish Royal Board of Waterfalls). Conc. Oct. '29.

3. Of Wood

Langlochfräsen in Holz.* (Keyway Milling in Wood.) G. Harnisch. Ver. deu. Ing. Oct. 26, '29.

4. Of Metal

Expériences américaines sur les Pièces Comprimées Obliquement ou Excentriquement.* (American Experiences with Pieces Compressed Obliquely or Eccentrically.) P. Caufourier. Gen. Civ. Oct. 5, '29.

h. Foundations, Bridge Piers and Abutments

Die Aufnahme des Schichtenprofils bei Bohrungen für Ingenieurbauten.* (Taking the Strata Profile in Borings for Engineering Constructions.) Karl Backofen. Z. d. Bauver. Serial beginning Oct. 30, '29.

Rebuilding Colorado River Bridge Pier After Collapse.* Eng. N. R. Oct. 31, '29.

Construction of the James River Bridge Project.* R. C. Wilson and Herbert B. Pope. Am. Soc. C. E. Nov. '29.

i. Coffer-dams

Deep Foundations for Lake Champlain Bridge Built with Open Cofferdams.* Eng. N. R. Nov. 21, '29.

k. Tunnels and Tunneling-Shields

The New Water Supply of Charleston, S. C.* J. E. Gibson. W. W. & Sewer. Oct. '29.

D. Highways

c. Construction

High-Speed Concreting Marks New York Highway Job.* Harold O. Weyrauch. Public W. Oct. '29.

Lime Rock Base for a Brick Road.* J. F. Coleman. Public W. Oct. '29.

Report on Subgrades and Pavement Bases. C. A. Hogentogler. (Report of Subcomm. read before Am. Road Bldrs. Assoc.) Can. Engr. Oct. 29, '29.

The Design of Concrete Paving Mixtures.* E. R. Kendall. Conc. Oct., '29.

Establishing a State Record in Concrete Road-Building.* R. W. Edwards. R. & S. Oct., '29.

Fine Aggregates in Bituminous Mixtures.* Hugh W. Skidmore. (From paper read before Am. Soc. Test. Mat.) R. & S. Oct., '29.

Construction of Traffic-Bound Roads. R. W. Wald. (Paper read before Nat'l Crushed Stone Assoc.) Can. Engr. Oct. 22, '29.

d. Maintenance

Oiled Gravel Roads in Colorado. J. E. Maloney. (Paper read before Univ. of Col.) R. & S. Oct. '29.

Oiled Gravel Roads in New Mexico. E. B. Bail. (Paper read before Univ. of Col.) R. & S. Oct., '29.

Roadside Activities on California Highways. R. & S. Oct., '29.

e. Street Cleaning, Dust Prevention, Snow Removal

How the Various States Are Handling Their Snow Removal Problems.* R. & S. Oct., '29.

h. Vehicles, Automobiles, Traffic

A Few Economical and Technical Aspects of the Road Problem of the Province of Quebec. Alex. Fraser. Eng. Inst. Can. Oct. '29.

Combating Traffic Vibration and Noise. Stephen E. Slocum. Eng. N. R. Oct. 31, '29.

E. Bridges, Viaducts and Arches

b. Iron and Steel Bridges and Viaducts

Continuous Truss Bridge 1,575 Ft. Long at Cincinnati.* Eng. N. R. Nov. 7, '29.

d. Concrete and Reinforced Concrete Bridges and Viaducts

Reinforced Concrete Bridge Over the Elorn River, Finisterre.* Herbert E. Steinberg. Eng. Oct. 18, '29.

Unique Construction Procedure on Long-Span Concrete Bridge Arches at Brest, France.* Eng. N. R. Oct. 31, '29.

The Behavior of a Reinforced Concrete Arch During Construction.* Searcy B. Slack. Am. Soc. C. E. Nov., '29.

Concrete Arch of Unusual Design Aids Highway Relocation.* D. M. McPhetres. Eng. N. R. Nov. 21, '29.

f. Suspension Bridges, Transfer Bridges

Detroit Suspension Bridge Opening Nine Months Ahead of Schedule.* Eng. N. R. Nov. 14, '29.

Die erste Hudson-Brücke bei New York mit 1,067 km weit gespannter Mittelöffnung.* (The first Hudson River Bridge at New York with a Center Span of 1,067 km.) Rudolf Bernhard. Ver. deu. Ing. Oct. 19, '29.

h. Computation, Tests, etc.

Rigid Frame Bridge Construction in Westchester County, New York, Development.* Arthur G. Hayden. Bost. Soc. C. E. Sept., '29.

Railway Bridge Impact Investigated. C. M. Goodrich. Can. Engr. Nov. 12, '29.
Vergleich zwischen Eisenbeton und Stahl vom Standpunkte der Brückendynamik.* (Comparison between Reinforced Concrete and Steel from the Viewpoint of Bridge Dynamics.) Rudolf Tillmann. Oest. Ing. Arch. Ver. Oct. 11, '29.

x. Miscellaneous

A Review of Vehicle Toll Bridge Field.* P. K. Schuyler. R. & S. Oct., '29.
The Romance of Bridge Building.* D. B. Steinman. Mil. Engr. Sept.-Oct., '29.

F. Inland Waters

c. Regulation of Waterways, Volumes of Discharge, Freshets, Floods, Soundings

Regulation of Levels, Flow, and Navigation, Niagara River: Summary and Conclusions of Various Studies.* Discussion: Robert E. Horton, Lynn L. Davis and Theron M. Ripley. Am. Soc. C. E. Nov., '29.
Silt Transportation by Sacramento and Colorado Rivers and By the Imperial Canal.* Discussion: C. S. Howard. Am. Soc. C. E. Nov., '29.
Dallas Reclaims 10,000 Acres in the Heart of the City.* Albert S. Fry. Eng. N. R. Nov. 21, '29.

d. Diverting Dams, Locks, Lifts, Elevators, Inclined Planes

Deadman Island Lock and Dam, Ohio River.* Hugh J. Casey. Mil. Engr. Sept.-Oct., '29.

h. Boats, Barges

Newly Equipped Upper Mississippi Drillboat.* A. L. Richards. Mil. Engr. Sept.–Oct., '29.

k. Utilization of Inland Waterways, Freight, Capacity

Traffic Capacity of the Panama Canal.* Harry Burgess. Mil. Engr. Sept.-Oct., '29.

G. Maritime Works

b. Management and Protection of Coasts, Beaches, Dunes

Construction of Groins and Revetments.* Johnstone-Taylor. Conc. Oct., '29.

c. Vessels and Maritime Navigation, Lighthouses, Buoys, Various Signals

Atlantic Liners.* E. De Vito. (Paper read before Inst. Naval Archts.) Eng. Serial beginning Oct. 25, '29.
Die Entwicklung des deutschen Seezeichenwesens.* (The Development of the German Marine Signaling System.) Gustav Meyer. Z. d. Bauver. Serial beginning Oct. 9, '29.

h. Wharves, Mooring Buoys, Harbor Equipment

Ein neuer Schuppenspeicher für Stückgut im Seehafen Stettin.* (A New Storage Shed for Package Freight in Stettin Port.) G. Fabricius and H. Schulze. Ver. deu. Ing. Oct. 12, '29.
Neuartige Schwimmkrane im Hamburger Hafen.* (New Type of Floating Crane in Hamburg Harbor.) O. Wundram. Ver. deu. Ing. Oct. 26, '29.

H. Railroads. Street and Interurban Railways. Automobiles. Aeronautics

a. Railroads

1. General Articles

On the Question of Competition of Road Transport.* H. L. Wilkinson. Int. Ry. Cong. Assoc. Aug., '29.
New Short Coal Line Provides An Interesting Study.* Ry. Age Nov. 2, '29.
Hudson Bay Railway Soon to be Completed.* Ry. Age Nov. 16, '29.
Les Possibilités d'Exploitation d'un Chemin de Fer Transsaharien.* (The Possibilities of Building a Trans-Saharan Railway.) L. Durandeau. Gen. Civ. Oct. 19, '29.

4. Track

A Rapid Method of Determining Endurance Limit by Means of Measuring Electrical Resistance.* Shoji Ikeda. Int. Ry. Cong. Assoc. Aug., '29.
On the Question of Rails Against Breakage and to Wear.* S. Matsunawa. Int. Ry. Cong. Aug., '29.
The Use of Steel Sleepers by British Railways.* Int. Ry. Cong. Assoc. Aug., '29.
Recent Developments in the Detection of Transverse Fissures in Rails.* C. W. Gennet, Jr. (Paper read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct., '29.
The Correction of Unsafe Methods in Track Work.* (Report of Comm. Read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct., '29.
Weed Control and Elimination.* (Report of Comm. read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct. '29.
Controlling Cross and Switch Tie Renewals. (Report of Comm. read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct., '29.
Good Workmanship in Relaying Rail.* (Report of Comm. read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct., '29.
The Selection and Training of Foreman. (Report of Comm. read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct. '29.

5. Signals and Safety Apparatus

Non-Automatic Devices for Load and No-Load Braking.* L. Chamon. Int. Ry. Cong. Assoc. Aug., '29.

Automatic Train Control in Germany.* (From *Modern Transport*). Int. Ry. Cong. Assoc. Aug., '29.

Canadian Pacific Installs Centralized Traffic Control to Solve Operating Problem.* Ry. Age. Oct. 26, '29.

Signals Direct Trains Through Lehigh Valley Tunnels.* H. W. Lewis. Ry. Age Nov. 16, '29.

6. Rolling Stock, Fuel

North American Develops Mechanical Refrigerator Car.* Ry. Age Nov. 16, '29.

Eight-Wheel Switchers for the Missouri Pacific.* Ry. Age Nov. 16, '29.

Caprottisteuerung an einer Tenderlokomotive.* (Caprotti Valve Gear on a Tender Locomotive.) Wilhelm Bauer. Ver. deu. Ing. Sept. 28, '29.

Die Kräfte im Triebwerk von Dreizylinderlokomotiven.* (The Forces in the Driving Unit of Three-Cylinder Locomotives.) F. Loewenberg. Ver. deu. Ing. Oct. 5, '29.

Die Anforderungen des Lokomotivbaues an den Dieselmotor.* (What Locomotive Construction Requires of the Diesel Engine.) F. Meineke. Ver. deu. Ing. Oct. 19, '29.

7. Uses of Electricity

Contact Wire Wear on Electric Railroads. I. T. Landhy. A. I. E. E. Oct. '29.

Elektrifikation der Zahnradbahn Visp-Zermatt.* (Electrification of the Visp-Zermatt Gear Wheel Railway.) Paul Altorfer. Schw. Bauz. Oct. 19, '29.

8. Stations, Terminals, Engine Houses, Shops

On the Question of the Methods to be used in Marshalling Yards to Control the Speed of Vehicles Being Shunted and to Ensure They Travel on to the Lines of the Various Groups of Sidings. Ctibor Fiala. Int. Ry. Cong. Assoc. Aug., '29.

Getting the Most from Labor-Saving Equipment. M. M. Backus. (Paper read before Roadmasters' Assoc.) Ry. Eng. & Main. Oct., '29.

As Good as New.* Ry. Eng. & Main. Oct., '29.

Brill Builds Large Rail-Car Power Plants.* Ry. Age Oct. 26, '29.

Small Engine Terminals Can be Modern.* Ry. Age. Oct. 26, '29.

Santa Fe Spends Literally for Its Supply Handling.* Ry. Age Serial beginning Nov. 2, '29.

Der Umbau des Lehrter Stadtbahnhofs in Berlin.* (Alteration of the Lehrte Railroad Station in Berlin.) J. Kuhnke. Zeit. Bau. Sept., '29.

9. Technical and Commercial Use.

How the New York Central Uses Motor Trucks.* F. C. Jerome. Ry. Age (Second Section) Oct. 26, '29.

Short Lines Find Motor Coaches Useful.* Ry. Age (Second Section) Oct. 26, '29.

b. Special Railroads

3. Narrow Gauge, Light Railways

On the Question of Penetration Railways. Ashley Biggs and C. W. Lloyd Jones. Int. Ry. Cong. Assoc. Aug., '29.

e. Automobiles

3. Electric Automobiles

Les Véhicules électriques à Accumulateurs. Les Camions de la Société des Véhicules Électriques Industriels.* (Storage Battery Vehicles. The Trucks of the Industrial Electric Vehicle Company.) G. Delanghe. Gen. Civ. Sept. 28, '29.

x. Miscellaneous

Le XXIIIe Salon de l'Automobile et du Cycle. Première Série (Paris, 3-13 octobre 1929).* (The 23d Automobile and Cycle Salon. First Series—Paris, October 3–13, 1929.) G. Delanghe. Gen. Civ. Serial beginning Oct. 12, '29.

f. Aeronautics

2. Dirigible Balloons

Untersuchungen an der Maschinenanlage des Luftschiffes "Graf Zeppelin." (Investigations on the Machinery of the Airship "Graf Zeppelin".) H. Thoma. Ver. deu. Ing. Sept. 28, '29.

4. Aerodromes and Landing Fields

Airport Lighting.* Public W. Oct., '29.

Factors Governing the Location of Airports.* Donald M. Baker. Am. Soc. C. E. Nov., '29.

Drainage and Runway Studies at the St. Louis Municipal Airport.* W. W. Horner. Eng. N. R. Nov. 7, '29.

I. Municipal Water-Works. Agricultural Engineering. Irrigation

a. General Articles

Hydraulic Engineering in the Philippines.* Chas. G. Gabelman. Mil. Engr. Sept.-Oct., '29.

Water Supply Problems of a Desert Region. Discussion: William E. Rudolph. Am. Soc. C. E. Nov., '29.

Extensions to Water Works, Calgary.* Can. Engr. Nov. 12, '29.

b. Hydrology, Water Resources

One Man Replaces Three at Water Station.* C. V. Bucher. Ry. Eng. & Main. Oct. '29.

Dubuque's Air-Lift Pumping Plant. (From Annual Report of Water Dept., Dubuque.) Public W. Oct., '29.

Cooperative Snow Surveys in California.* Harlowe M. Stafford. West. Constr. N. Oct. 25, '29.

Ueber die künstliche Beeinflussung der Grundwasserbildung im Flachlande.* (On the Artificial Control of Ground Water Accumulation in Low Regions.) Chr. Mezger. Gas und Wasser. Sept. 28, '29.
Mehr Wirtschaftlichkeit in der Wasserversorgung.* (More Economy in Water Supply.) Schubert. Gas und Wasser. Oct. 5, '29.

c. Dams and Reservoirs

Interesting Construction Methods Used on Dams for Tuscaloosa, Ala.* George Jacob Davis, Jr. Eng. & Contr. Oct., '29.
Buried Reservoir Design.* David Landau. Conc. Serial beginning Oct., '29.
Serious Defects in Foundation Rock Stop Work on San Gabriel Dam Project.* (From report of Board of Engineers). Eng. N. R. Oct. 31, '29.
High Dams: The Viewpoint of the Geologist. F. L. Ransome. Am. Soc. C. E. Nov. '29.
Construction Methods and Plant Layout at Coolidge Dam, in Arizona.* J. G. Tripp. Am. Soc. C. E. Nov., '29.
Classification, Selection, and Adaptation of High Dams. D. C. Henny. Am. Soc. C. E. Nov. '29.
Lac Seul Conservation Dam, Ear Falls.* T. H. Hogg. Can. Engr. Nov. 5, '29.
Earth Dam With Spillway Channel Through Embankment.* Eng. N. R. Nov. 7, '29.
Criticisms of Bonnet Carre Spillway. W. B. Gregory and A. B. B. Harris. Eng. N. R. Nov. 21, '29.
L'Effet de la Courbure des Barrages-Poids.* (The Effect of the Curvature of Gravity Dams.) Fernand Campus. Gen. Civ. Oct. 12, '29.
Eine bergschadensichere Wasserbehälteranlage in Essen.* (A Mine-Subsidence-Proof Water Reservoir in Essen.) Nerreter. Gas und Wasser. Serial beginning Oct. 12, '29.

d. Analysis and Purification of Water

Phenol Tastes and Odors in Water Supplies of Ohio River Cities.* H. W. Streeter. (Paper read before Am. Public Health Assoc.) W. W. & Sewer. Oct., '29.
Mixing and Coagulation in Water Works Practice. M. P. Hatcher. (Paper read before Texas W. W. Short School). W. W. & Sewer. Oct., '29.
Designing Rapid Sand Filters. A. W. Livingston and E. W. Bacharach. (From paper read before Missouri Water & Sewage Conference). Public W. Oct., '29.
Bacterial Examination of California Water Supplies. C. G. Gillespie. West. Constr. N. Oct. 25, '29.
Crenothrix. Carl Wilson. West. Constr. N. Oct. 25, '29.
Parkersburg Removes CO_2 From New Well-Water Supply.* Myron G. Mansfield. Eng. N. R. Nov. 7, '29.

e. Distribution of Water

The New Water Supply of Charleston, S. C.* J. E. Gibson. W. W. & Sewer. Oct., '29.
Installing Valves and Hydrants. C. S. Howard. (Paper read before Iowa W. W. Conference.) Can. Engr. Oct. 22, '29.
Kempton Park Pumping Station of the Metropolitan Water Board.* Engr., Serial beginning Oct. 25, '29.
East Bay Municipal Utility District.* Louis L. Farrell. West. Constr. N. Oct. 25, '29.
Report of the Committee of the Irrigation Division on "A National Reclamation Policy".* Discussion: G. E. P. Smith, R. K. Tiffany and David Weeks. Am. Soc. C. E. Nov. '29.
Past Experiences With High Dams and Outlook for the Future. A. J. Wiley. Am. Soc. C. E. Nov., '29.
Lining Canals With Concrete on the Yakima Project.* Eng. N. R. Nov. 7, '29.
Building High-Head Siphons on the Yakima Project.* Eng. N. R. Nov. 14, '29.

f. Drainage of Land

The Drainage of the Fens and Marshlands of the Wash.* G. E. Mathews. Inst. Mun. & Co., Engrs. Oct. 29, '29.
Grand Marais Drainage Project Report.* Can. Engr. Nov. 5, '29.

J. Sewerage. Sewage and Refuse Disposal

a. Sewers and Drains

The Hamilton Intercepting Sewer and Main Pumping Station.* H. S. Philips. Eng. Inst. Can. Oct. '29.
Die Berechnung von Sielen die unter Stau wirken.* (The Calculation of Sewers that Have a Damming Action.) H. Eigenbrodt. Gesund. Ing. Oct. 12, '29.

b. Sewage Disposal, Purification

The Albury, N. S. W., Sewerage System.* F. G. D. Stone. Comwlth. Engr. Sept. 2, '29.
Odor Control at the Macon Sewage Plant.* W. Scott Johnson and Herbert Bosch. Public W. Oct. '29.
Sludge Disposal at the Calumet Sewage Treatment Works.* A. H. Goodman and C. E. Wheeler. (Paper read before Central States Sewage Works Assoc.) W. W. & Sewer. Oct., '29.
The New Sewage Disposal Works of Highlands, New Jersey.* Lester H. Burns. W. W. & Sewer. Oct., '29.
Collection and Utilization of Gases. Anthony J. Fischer. (Paper read before Texas W. W. Short School.) W. W. & Sewer. Oct., '29.
Cost of Sewage Works Operations.* C. E. Keefer. (From Sewage Works *Journal.*) W. W. & Sewer. Oct., '29.

Industrial Wastes in Sewage. George S. Russell. (Abstract of paper read before Missouri Water & Sewage Conference). Public W. Oct. '29.
Friction of Sewage Sludge in Pipes. (Progress Report of Comm. of San. Eng. Div.) Discussion: C. E. Keefer and W. S. Pardoe. Am. Soc. C. E. Nov., '29.
The Sewage Disposal Works of Decatur, Illinois.* Discussion: Samuel A. Greeley, and William D. Hatfield. Am. Soc. C. E. Nov., '29.
New Southwest Sewage-Works of Springfield, Mo.* George S. Russell. Eng. N. R. Nov. 7, '29.
Sewage Treatment for Grand Marais. Can. Engr. Nov. 12, '29.
Operation of Sewage-Works at Princeton, Ill. F. C. Roe. (Paper read before Illinois Soc. Engrs.) Eng. N. R. Nov. 14, '29.
Basing Sewage-Works Requirements on Stream Pollution Studies.* A. C. Purdy. Eng. N. R. Nov. 21, '29.
Die Münchner Kläranlage.* (The Munich Clarification Plant.) H. Keppner. Gesund. Ing. Serial beginning Sept. 28, '29.
Die schädlichen und nützlichen Wirkungen häuslicher und städtischer Abwässer auf die Fischerei unter besonderer Berücksichtigung der Abwasseranlagen Münchens.* (The Injurious and Useful Effects of Domestic and Municipal Sewerage on the Fish Industry, with Special Consideration of the Munich Sewage Plant.) A. Schillinger. Gesund. Ing. Serial beginning Oct. 19, '29.

c. Refuse Disposal

Die Müllverbrennungsanstalt der Stadt Köln.* (The Refuse Incineration Plant for the City of Cologne.) Z. d. Bauver. Oct. 30, '29.

K. Heat Engines

b. Steam Turbines

Versuche an einer 14,000 kW-Entnahmeturbine.* (Tests on a 14,000 KW Extraction Turbine.) H. Baer. Ver. deu. Ing. Oct. 12, '29.
Ueber die Genauigkeit von Dampfmessungen mittels Düsen bei Abnahmeversuchen.* (On the Accuracy of Steam Measurement by Means of Nozzles in Acceptance Tests.) M. Ten Bosch. Schw. Bauz. Oct. 26, '29.

L. Electricity

a. Production of Electricity

Power From the Earth.* Albert G. Ingalls. Sci. Am. Nov., '29.

b. Distribution and Transmission of Electricity

1. Power Plants
The Hams Hall Power Station.* Engr. Nov. 8, '29.
Les Extensions de l'Usine d'Issy-les-Molineaux de la Compagnie Parisienne de Distribution d'Electricité.* (The Extensions to the Issy-les-Molineaux Plant of the Parisian Electricity Distribution Company.) Ch. Galatoire-Malégarie. Gen. Civ. Oct. 5, '29.
3. Distribution and Wiring of Electricity
Contact Wire Wear on Electric Railroads. I. T. Landhy. A. I. E. E. Oct. '29.

c. Electric Lighting

2. Uses
Comprehensive Planning of Utilitarian Street Lighting.* J. F. Morton. Public W. Oct., '29
Airport Lighting.* Public W. Oct., '29.
3. Welding
Electric Arc Welding.* A. Ramsay Moon. Comlth. Engr. Serial beginning Sept. 2, '29.
Welding of Pipe Lines in the Field. W. R. Ost. (Paper read before Am. Weld. Soc.) Can. Engr. Nov. 12., '29.

M. Architecture

a. Educational, Government and Scientific Buildings

Luftung der Dresden Schulen.* (Ventilating the Dresden Schools.) L. Wahl and A. Kussman. Gesund. Ing. Sept. 28, '29.

b. Business and Commercial Buildings

Confederation Building, Ottawa, Ont.* Can. Engr. Oct. 22, '29.
Two Theaters in Chicago Office Building.* E. A. Magurn. Eng. N. R. Nov. 14, '29.

e. Hospitals and Asylums

Die neuen Kurbauten in Bad Pyrmont.* (The New Buildings at Bay Pyrmont.) Th Brodführer. Z. d. Bauver. Oct. 2, '29.

h. Roofs, Domes, Steel Framing

Hangers Carry Expansion Ends of Long Roof Trusses.* W. S. Wolfe. Eng. N. R. Nov. 21, '29.
Neuzeitlicher Hallenbau in Eisen und Eisenbeton.* (Modern Hall Construction in Iron and Reinforced Concrete.) H. Ritter. Oest. Ing. Arch. Ver. Oct. 25, '29.

O. Administration. Legislation. Economics. Statistics

b. Economic Questions of a General Character, Valuations

The Engineer in Building Construction. Eng. & Contr. Oct. '29.
Prequalification of Bidders on Public Works Contracts. Philip A. Beatty. Public W. Oct., '29.

d. Administrative and Financial Management of Means of Communication

5. Railroads and Street Railways

On the Question of the Methods Followed in Training of Staff, Professional, Technical and Ordinary Working Grades. L. C. Fritch. Int. Ry. Cong. Assoc. Aug., '29.
On the Question of the Methods Followed in Training of Staff, Professional, Technical and Ordinary Working Grades. Mereutza. Int. Ry. Cong. Assoc. Aug., '29.

P. Geology

Neuere bodenphysikalische und erdbaumechanische Forschungsergebnisse in deen nordischen Ländern.* (Recent Geophysical and Geomechanical Research Results in the Northern Countries.) P. Nemenyi. Zeit. Bau. Serial beginning Sept., '29.

Q. Surveying and Geodesy

Adjustment of Transit and Stadia Traverses.* Howard S. Rappleye. Am. Soc. C. E. Nov., '29.

S. City Planning

Development of Parks and Parkways in Westchester County, New York.* L. G. Holleran. Bost. Soc. C. E. Sept., '29.
The Planning of Capital Cities: Denver, Colorado. Discussion: Richard R. Lyman. Am. Soc. C. E. Nov. '29.
Bauordnung und Städtebau.* (Building Regulations and City Planning.) Alfred Gellhorn. Z. d. Bauver, Oct. 16, '29.

Engineering Societies Employment Service

The Engineering Societies Employment Service is under the joint management of the National Societies of Civil, Mining, Mechanical, and Electrical Engineers. A Chicago office is maintained in co-operation with the Western Society of Engineers, and a San Francisco office, in co-operation with the Engineers' Club of San Francisco and the California Section of the American Chemical Society. The Service is available only to the several memberships and is maintained by contributions from the Societies and their individual members who are directly benefited.

Offices.—Eastern Office, 31 West 39th Street, New York, N. Y., Walter V. Brown, Manager; Chicago Office, 205 West Wacker Drive, 1216 Engineering Building, Chicago, Ill., A. Krauser, Manager; and San Francisco Office, 57 Post Street, Room 715, San Francisco, Calif., Newton D. Cook, Manager.

Men Available.—Under this heading, brief announcements will be published without charge. These announcements will not be repeated, except on request received after an interval of one month. Notices for *Proceedings* should be addressed to Employment Service, 31 West 39th Street, New York, N. Y., and should be received prior to the first of the month.

Opportunities.—A Bulletin of engineering positions available is published weekly and may be obtained by members of the Societies concerned at a subscription rate of $3 per quarter, or $10 per annum, payable in advance. Positions which are not filled promptly as a result of publication in the Bulletin, may be announced herein.

Placement Fees.—The Service is operated on a co-operative basis, whereby those benefiting contribute in accordance with the following rates: One and one-half per cent. of the first year's salary for permanent positions. Temporary positions, six months or less, 3% of the total salary received, payable monthly.

Replies to Announcements.—Replies to announcements published herein, or in the Bulletin, should be addressed to the key number indicated in each case, with two two-cent stamps attached for re-forwarding, and forwarded to the Employment Service at the address given. Replies received by the Service after the positions to which they refer have been filled, will not be forwarded.

MEN AVAILABLE

MUNICIPAL AND SANITARY ENGINEER, Assoc. M. Am. Soc. C. E.; graduate civil engineer; married. Sixteen years' general experience in office and in field on design and construction of sewerage systems, sewage treatment works, water supply systems, and other related works. Available on reasonable notice. A–466.

CIVIL ENGINEER, M. Am. Soc. C. E. Twelve years', maintenance, extension large municipal water supply, division engineer in charge, improvements costing $3 000 000 to $4 000 000. Four years, design, construction of wharves, docks, bulkheads, sea walls. Nine years, designing engineer, chief engineer, engineering, contracting company, designers, builders of dams and hydro-electric plants. Registered Professional Engineer, New York, North Carolina, Michigan. A-914.

ENGINEER, M. Am. Soc. C. E.; college graduate; age 49. Twenty-five years' broad engineering experience; five years as engineer and architect in underwriting department of bond houses specializing in real estate issues. Desires position with bank, loaning institution, or bond house as engineer or assistant to underwriting executive. A-2270.

ENGINEER, Assoc. M. Am. Soc. C. E.; married; expert on design and construction, dams, masonry of all kinds, aqueducts, pipe lines. Hydro-electric, domestic supply, irrigation, hydraulics generally. Examinations, estimates, bids, appraisals, reports. Foreign experience, Peru, Mexico, Santo Domingo, Sicily, Greece. A-2848.

CIVIL ENGINEER, M. Am. Soc. C. E.; age 51. Twenty-nine years' experience; Five

years, maintenance of way department, steam railroad, track, bridges, land; fourteen years, chief engineer, resident engineer, re-construction, elevated structure, track, yards, stations, buildings; ten years, Brooklyn surface car lines, inventory, appraisal, investigation, construction expenditures, reports. A-4907.

CONTRACTOR'S ENGINEER, Assoc. M. Am. Soc. C. E.; New York State license, Professional Engineer; age 44; desires to make a change. Executive of contracting company. More than twenty years' experience, estimating, purchasing, plant layouts, superintendence, and management in the following lines: Subways, underpinning, foundations, sewage disposal plants, sewers, filtration plants, pumping stations, dams. B–4680.

ENGINEER, EXECUTIVE, M. Am. Soc. C. E.; graduate civil engineer with degrees; age 40. Broad experience in structural and industrial work, including allied mechanical lines. B–6046.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; age 38; married. Eight years, preliminary and final surveys for irrigation, storage, hydro-electric developments; eleven years, actual construction of projects surveyed. Well experienced in estimating and construction involving heavy excavation, high explosives, earth dams, masonry structures. Available on two months' notice. United States preferred. B-7043.

CIVIL ENGINEER, M. Am. Soc. C. E.; age 40; technical education. Over twenty years' experience, consultations, investigations, reports, supervision, design, surveys, and construction, on port and harbor works, waterways, terminals, railroads, irrigation, industrial plants, water-front and miscellaneous structures, buildings, foundations, etc. Fifteen years, responsible charge and specialization, water-front development, terminals, etc. B-7393.

CIVIL ENGINEER, M. Am. Soc. C. E. Twenty-four years' experience, design and construction of steel and reinforced concrete, bridges, buildings, etc., railroad and municipal works. Open for position as chief engineer, superintendent, or similar. B–9497.

GRADUATE CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; age 34; married. Two years, field, mill buildings; two years, estimator, steel sash products; five years, superintendent, Dupont type construction; three years, superintendent-estimator, church types. Available in one week. C–948.

EXECUTIVE, M. Am. Soc. C. E.; civil and mining engineer; age 59. Experience: Development, up-building of ports, harbors, and their tributary districts; design, construction of railroad, steamship terminals; structures and facilities required for handling, storage, trans-shipment; municipal works, heavy foundations, water-works, highway construction; investigation, appraisal of industrial, commercial enterprises, and public utilities. C-971.

ASSISTANT ENGINEER, Jun. Am. Soc. C. E.; 1924, B. S. in C. E., Mass. Inst. Tech.; married. Two years, party chief, county, highway, general surveys; one year, chief inspector, $1 000 000 hotel and miscellaneous structures; two years, assistant engineer, charge plans, estimates, inspection large dredge project, piers, jetties. Desires permanent employment with opportunity for advancement. C–1453.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; married. Three years' drafting experience on Deeper St. Lawrence Waterway survey, mill design, water supply, suburban development work, general steel, timber, and reinforced concrete building design with contracting company. Desires engineering office position with future. Location, New York State preferred. C–1833.

CIVIL ENGINEER, M. Am. Soc. C. E., with experience as one of chief engineering officers of a transcontinental railroad, as manager of a short-line railroad, as assistant superintendent of a main-line division, and with training in the bridge engineer's office and in the field on location, construction, and maintenance desires to make a connection. C-2263.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; college graduate; age 34. Thirteen years' experience as structural engineer, estimator, specification writer, architects' superintendent, and contractors' manager on reinforced concrete and steel-framed buildings; three years' experience on bridges. Special experience on welding power houses, coal-handling pockets, roundhouses, heavy masonry, and foundations. C–3334.

ENGINEER, M. Am. Soc. C. E.; American; technically trained; 20 years on hydro-electric, highway, and railroad development, especially location, investigation, estimates, reports, desires engagement. Knowledge of Spanish-American conditions and language. Highest references as to executive, administrative, and engineering qualifications. Just completed engagement as chief engineer of $8 000 000 project in Colombia. C-3806.

GRADUATE CIVIL ENGINEER, Jun. Am. Soc. C. E. Six years' experience; four years in field on topographic, railroad, and transmission line location surveys; two years in office, designing and checking steel and concrete structures for mill buildings. At present, employed. C–4339.

STRUCTURAL ENGINEER, Assoc. M. Am. Soc. C. E.; age 40; maintains own office in New York City as consulting engineer since 1919. Practice covers designing and constructing railroad structures and industrial buildings. Specialist on reinforced concrete. Experienced in New York City real estate development and financing. C–5358.

GRADUATE CIVIL ENGINEER, Assoc. M. Am. Soc. C. E., with ten years' broad experience in concrete, steel, and hydraulics; industrial plants, hangars, airship halls, bridges, theatres, churches, and hydro-electric developments; design, estimate, specifications, and construction; good organizer; desires responsible position, preferably abroad, Europe or South America. Languages, English, French, German, Spanish, Portuguese. C–5774.

ENGINEER, Assoc. M. Am. Soc. C. E.; graduate; age 35; married; seeks industrial and investment analysis work with established organization. Banking

and professional references best and conclusive. Fourteen years' varied experience, United States, Latin-America, Europe, Orient. Speaks Spanish, French. Work included industrial analyses, reports, cost finding, all phases financing projects, foreign investigations. Good organizer and co-operator. C-6258.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; Twenty-five years' experience, railroad, highway construction, maintenance, drainage, reclamation, shore, bank protection, general earth handling; just returned from railroad work in Turkey. Thoroughly familiar with modern machine methods, shovels, trucks, tractors, and supporting equipment. Capable of organizing forces and training natives as well as directing work. C-6350.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; Cornell; age 28; single. Six years' experience, hydraulic engineering; irrigation; dams, water supply, drainage, river improvement, port development; investigations, design, and construction; reports. Two years, foreign railway location. Location, United States or foreign. C-6458.

CIVIL ENGINEER, M. Am. Soc. C. E.; graduate engineer; age 49. Wide experience in hydro-electric work, river hydraulics, dams, other structures; water supplies and purification, electric power, transmission, and power factor problems. Reports on projects and properties, appraisals, arbitrations, condemnations, etc. Executive on many large works. Consultant on Government work. Maintained consulting office for twenty years. C-6573.

GRADUATE CIVIL ENGINEER; age 22; who has had railroad and highway location experience. Also five months' experience in air conditioning work. Desires foreign engineering work or sales work handling an engineering material. C-6579.

CIVIL ENGINEER; licensed. Three years, design and construction of municipal improvements; seven years, construction of caisson and pile foundation, reinforced and structural iron work on power house, gas plant, tower line, and viaduct; five years, steel erection; seven years, survey and construction, 2 000-acre development. C-6649.

EXECUTIVE ASSISTANT, Jun. Am. Soc. C. E.; age 28; engineering education, B. S. degree in Civil Engineering. Seven years' varied experience in consultant's office and with field forces on municipal, hydro-electric, streets and roads, reports, water supplies, sewerage systems and plants, industrial villages, and industrial surveys. Eastern United States preferred. C-6653.

CIVIL ENGINEER, Jun. Am. Soc. C. E.; Graduate, Mass. Inst. Tech., 1926; age 26; desires a sales position in firm manufacturing structural materials or equipment of engineering application. Experienced in structural design, stress analysis, and estimating. C-6688.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; age 32; married. Experience in design, construction, and operation of irrigation works; design of sanitary sewers and storm drains; design of construction plants for dams and tunnels. Location, Western States. C-6690-911-A-6. (San Francisco.)

GRADUATE CIVIL ENGINEER, Jun. Am. Soc. C. E.; age 26, single. Four years' experience in drafting room and field with firm engaged in engineering, construction, and utility management. Desires position in which additional experience may be gained in hydro-electric design and construction. Prefers East or Middle West location. C-6693.

CIVIL ENGINEER, Assoc. M. Am. Soc. C. E.; graduate; age 42; married. Seven years' broad experience, design, construction, railways, bridges, buildings, docks, municipal works; nine years, street railway operating executive; four years private practice, building contractor. Entire experience in Latin-America. Thorough knowledge of Spanish. Particularly qualified, investigations, reports, Latin-America. Desires connection, consulting engineer, engineer sales organization, public utility, general contractor. United States, foreign. C-6706.

Membership

(From November 5 to December 3, 1929)

Additions

Members		Date of Membership.
ACEVEDO, Octavio Augusto. Prof., Mathematics and Civ. Eng., Universidad de Santo Domingo, Santo Domingo, Dominican Republic	M.	Nov. 11, 1929
AKER, John Joseph. 187 Ashburton Ave., Yonkers, N. Y.	Jun.	Oct. 14, 1929
ALCORN, Manford Craig. Res. Engr., Shell Oil Co., 1711 Appleton St., Long Beach, Calif.	Jun. Assoc. M.	July 12, 1926 Oct. 14, 1929
ALLEN, Edward Russell. Draftsman, The J. E. Greiner Co., 1308 Lexington Bldg. (Res., West Joppa Rd., Towson), Baltimore, Md.	Jun.	Nov. 11, 1929
ANDERSON, Enoch Albin. 4029 Meridian Ave., Seattle, Wash.	Jun.	Oct. 14, 1929
ANDERSON, John Gordon. Care, Am. Bridge Co., Pencoyd, Pa.	Jun.	Oct. 14, 1929
ANDERSON, William Redmond. Box 295, Weldon, N. C.	Jun.	Oct. 14, 1929
ANTONACCI, Michael Henry. Engr., City Planning Comm. (Res., 230 North 13th St.), San José, Calif.	Jun. Assoc. M.	Mar. 15, 1926 Nov. 11, 1929
APPEL, Theodore Burton, Jr. 305 North Duke St., Lancaster, Pa.	Jun.	Nov. 11, 1929
AXELSON, Evert Alexis. 109 Central Ave., North Wildwood, N. J.	Jun.	Oct. 14, 1929
BAILY, Robert William. Pres., Baily-Davis Corporation, 1528 Walnut St., Room 726, Philadelphia, Pa.	M.	Nov. 11, 1929
BAKER, Paul Wallace. Graduate Asst., Dept. of Civ. Eng., Univ. of Nebraska, Lincoln, Nebr.	Jun.	July 15, 1929
BELKIN, Maurice Hill. Civ. Engr. and Archt., Irving Feldman, Inc. (Res., 1006 Caton Ave.), Brooklyn, N. Y.	Assoc. M.	Nov. 11, 1929
BERGER, John Stephen, Jr. With J. A. Roebling Sons & Co., Hudson River Bridge, 177th St. and Riverside Drive (Res., 415 East 162d St.), New York, N. Y.	Jun.	Nov. 11, 1929
BETZER, Stanley Irvin. Junior Engr., Eng. Dept., Phillips Petroleum Co., Bartlesville, Okla.	Jun.	Nov. 11, 1929
BIEDERMAN, William Harns. 233 Fourth Ave., Phoenixville, Pa.	Jun.	Nov. 11, 1929
BOLAFFIO, Robert. Constr. Supt., Brecher Bldg. Corporation (Res., 3028 Academy St., Astoria), Long Island City, N. Y.	Assoc. M.	Nov. 11, 1929
BOVET, Raymond Claude. Box 176, San Mateo, Calif.	Jun.	Oct. 14, 1929
BOWMAN, Waldo Gleason. Asst. Editor, *Engineering News-Record*, 10th Ave. at 26th St., New York (Res., 16 Poplar St., Douglaston), N. Y.	Jun. Assoc. M.	Jan. 18, 1926 Nov. 11, 1929
BRADY, Samuel Arthur. Engr. of Maintenance, State Highway Dept., Box 1157, Little Rock, Ark.	Assoc. M.	Nov. 11, 1929
BURGOYNE, John Henry. Chf. Engr., Kennedy & Carey, Casilla 212, Cochabamba, Bolivia	Jun. Assoc. M. M.	Sept. 1, 1903 Dec. 5, 1906 July 8, 1929
BUSSEY, Joseph Connor. Asst. Engr., Cincinnati Union Terminals Co., 1020 Temple Bar Bldg., Cincinnati, Ohio	Assoc. M.	July 15, 1929
CAMPBELL, Aaron Putnam. Chf. Constr. Engr., W. S. Barstow & Co., Inc., Reading (Res., 1124 Belmont Ave., Wyomissing), Pa.	Assoc. M.	Nov. 11, 1929
CANT, George Francis, Jr. 201 Penn St., Huntingdon, Pa.	Jun.	Oct. 14, 1929
CERVENY, Albert Louis. With Frederick G. Anderson (Res., 615 South Clarkson St.), Denver, Colo.	Jun.	Oct. 14, 1929
CHANDLEE, Ellis Johns. Pres. and Gen. Mgr., Chandlee Steel & Iron Co., 1216 Haywood Rd., Asheville, N. C.	Assoc. M.	Nov. 11, 1929
CLASSEN, Ashley Green. Sales Engr., The Western Metal Mfg. Co., Box 2246, Lubbock, Tex.	Jun. Assoc. M.	July 11, 1927 Nov. 11, 1929
CLEMENT, Edward Dawson. Pres., Salmons-Clement Co., Inc., 9 State St., Charleston, S. C.	Assoc. M.	Nov. 11, 1929
COCHRAN, Herbert Ray. Asst. Gen. Mgr., Estimator and Structural Designer, William F. Lotz, Oxford Bank Bldg., Frankford, Philadelphia, Pa.	Assoc. M.	Nov. 11, 1929
COLLINS, George Miles. Room 417, Hawaiian Elec. Bldg., Honolulu, Hawaii	Jun. Assoc. M. M.	June 3, 1915 Oct. 11, 1920 Oct. 14, 1929
CORTESE, Anthony. 540 Park Rd., Ambridge, Pa.	Jun.	Nov. 11, 1929
COTTON, Cecil Randolph. 419 Eureka St., Pittsburgh, Pa.	Jun.	Nov. 11, 1929
DALLY, Harold Nelson. Magalia, Calif.	Jun.	Oct. 14, 1929
DARBY, Eugene Benjamin. Supt., R. W. Briggs & Co., Pharr, Tex.	Jun.	Nov. 11, 1929
DEWITT, John Ellingwood. 10 Oakway, Scarsdale, N. Y.	Jun.	Oct. 14, 1929
DUHIG, Maurice Michael. 25-84 Forty-sixth St., Long Island City, N. Y.	Jun.	Oct. 14, 1929
EBY, Martin Keller. 815 North Waco, Wichita, Kans.	Jun.	Oct. 14, 1929
ELLABY, Charles Hamilton. Asst. Engr., Wabash Ry., 1407 Ry. Exchange Bldg., St. Louis, Mo.	Assoc. M.	Nov. 11, 1929
FAHRENKROG, Eugene Henry. 4550 Adelaide Ave., St. Louis, Mo.	Jun.	Nov. 11, 1929
FAIRBAIRN, Edwin Alexander. Box 6044, R. F. D. 5, Sacramento, Calif.	Jun.	Oct. 14, 1929

MEMBERS—(*Continued*)

		Date of Membership.
FARMER, Edward August. 411 Hearne Ave., Lees Summit, Mo...	Jun.	Oct. 14, 1929
FARRELL, Frederick Bathurst. Junior Highway Engr., U. S. Bureau of Public Roads; 7122 Clyde Ave., Chicago, Ill.....	Jun.	Nov. 11, 1929
FARRELL, Joseph Ignatius. With The Philip Carey Co., Cincinnati, Ohio (Res., 2330 Sixteenth St., Troy, N. Y.).....	Assoc. M.	Nov. 11, 1929
FENWICK, Kenneth Macdonald. Draftsman and Computer, Los Angeles Flood Control Dist. (Res., 1124 South Manhattan Pl.), Los Angeles, Calif.....	Jun.	Oct. 14, 1929
FERRER, Miguel. Box 275, San Juan, Porto Rico.....	M.	Nov. 11, 1929
FINNELL, Walter James. Designer and Engr., City of Tacoma (Res., 4529 South 7th St.), Tacoma, Wash.....	Assoc. M.	Nov. 11, 1929
FISHER, Harry Benjamin. Designer and Estimator, Robins Conveying Belt Co., 15 Park Row, New York, N. Y. (Res., 169 Joralemon St., Belleville, N. J.).....	M.	Nov. 11, 1929
GARRETT, Ben Screws. Estimator and Designer, M. K. T. Ry., 703 M. K. T. Ry. Bldg., Dallas, Tex.....	Jun.	July 15, 1929
GARTNER, Abraham Israel. 1207 Forty-ninth St., Brooklyn, N. Y.	Jun.	Nov. 11, 1929
GHERSAN, Thomas Anthony. Junior Engr., Board of Transportation, New York (Res., 2436 Twenty-fourth St., Astoria, Long Island City), N. Y.....	Jun.	Nov. 11, 1929
GINDRAT, Norman Rudolph. Deputy Chf. Engr., Camden County Park Comm., 1716 Gross Ave., Merchantville, N. J.....	Assoc. M.	Nov. 11, 1929
GLASSMAN, Louis Harry. Draftsman, U. S. Naval Aircraft Factory (Res., 4040 Spruce St.), Philadelphia, Pa.....	Jun.	Oct. 14, 1929
GOLDWASSER, Milton. 1954 Unionport Rd., New York, N. Y....	Jun.	Nov. 11, 1929
GONANO, Lezelle. Box 5, Pageton, W. Va.....	Jun.	Nov. 11, 1929
GONZALEZ, Rafael Antonio. Chf. Engr., Isabela Irrig. Service, Quebradillas, Porto Rico.....	Assoc. M. M.	Dec. 4, 1922 Oct. 7, 1929
GRANACHER, Charles Willard. 1420 Fourth Ave., Coraopolis, Pa.	Jun.	Oct. 14, 1929
GREGG, Clarence Milton. Transitman, N. Y. C. R. R. (Res., 1 State St.), Watertown, N. Y.....	Assoc. M.	Nov. 11, 1929
GRIFFITH, Dalzell Melvin. 112 Stewart Ave., Ithaca, N. Y.....	Assoc. M.	Nov. 11, 1929
GROVE, Thomas Aiken. 2102 East 100th St., Cleveland, Ohio...	Jun.	Nov. 11, 1929
GRUBB, Charles Edmund. County Engr. and County State Highway Commr., New Castle County (Res., 2503 Franklin St.), Wilmington, Del.....	M.	Nov. 11, 1929
HERRINGER, Elmer John Joseph. 540 North Laramie Ave., Chicago, Ill.....	Jun.	Oct. 14, 1929
HIGH, Edward Louis. Junior Engr., Interstate Commerce Comm. (Res., 1826 G St., N. W.), Washington, D. C.....	Jun.	Nov. 11, 1929
HINCKLEY, Herbert McDonald. Structural Engr., R. O. Jameson, 1005 Southwestern Life Bldg., Dallas, Tex.....	Assoc. M.	Nov. 11, 1929
HOLLER, Arthur Fox. Asst. Mgr. in Chg. of Eng., Eastern Branch, Standard Oil Co. of Pennsylvania, Public Ledger Bldg., Philadelphia (Res., 322 Owen Ave., Lansdowne), Pa.....	Jun. Assoc. M.	June 19, 1922 Nov. 11, 1929
HOROWITZ, Hyman. 421 East 65th St., New York, N. Y.....	Jun.	Nov. 11, 1929
HOUTMAN, Gustave Desire. Deseigning Engr., County Engr.'s Office, Delaware County (Res., 14 West Jefferson St.), Media, Pa.....	Assoc. M.	Nov. 11, 1929
ITANI, Salahuddin. 906 Greenwood Ave., Ann Arbor, Mich.....	Jun.	Nov. 11, 1929
IVEY, William Tomlinson. Care, Hydr. Dept., Aluminum Co. of America, 2400 Oliver Bldg., Pittsburgh, Pa.....	Assoc. M.	Nov. 11, 1929
JAMES, Charles Harold. With L. F. Harza, 2122 Eng. Bldg., Chicago, Ill.....	Assoc. M.	Oct. 14, 1929
JORGENSEN, Albert. Instr., Univ. of Illinois, Urbana (Res., 56 East Green St., Champaign), Ill.....	Assoc. M.	Oct. 14. 1929
KILLIAN, Martin Burger. Supt., W. L. Pearson & Co., Lafayette, La.....	Jun.	May 13, 1929
KIMBALL, William Phelps. Asst. in Eng., Thayer School of Civ. Eng., Dartmouth Coll., Box 569, Hanover, N. H.....	Jun.	Nov. 11, 1929
KOHLI, Charles Brice. Junior Civ. Engr., 12th Lighthouse Dist., Milwaukee, Wis.....	Jun.	Nov. 11, 1929
KUMNICK, Fred William. 310 Woodland Rd., Sewickley, Pa.....	Jun.	Nov. 11, 1929
LATIMER, Marion Millard. Asst. Res. Engr., State of Illinois, Div. of Waterways (Res., Washington and Des Plaines St.), Joliet, Ill.....	Jun.	Nov. 11, 1929
LIDDLE, George Frederick. Civ. Engr., 309 Union National Bank Bldg. (Res., 382 Prospect St.), Muskegon, Mich.....	Assoc. M.	Nov. 11, 1929
LINDSTROM, Bartil William. 910 Hudson Ave., Union City, N. J.	Jun.	June 10, 1929
LIPSCOMB, William Peter. 744 Clark Ave., Webster Groves, Mo..	Jun.	Oct. 14, 1929
McKIM, Donald Grant. Res. Engr., State Highway Dept., Box 347, Liberty, Tex.....	Assoc. M.	Nov. 11, 1929
McLEROY, Hugh Finlay. 412 Senate Apartment Hotel, Kansas City, Mo.....	Jun.	Oct. 14, 1929
MALE, Milton. Welding Engr., Am. Welding Society, 33 West 39th St. (Res., 315 West 115th St.), New York, N. Y.....	Jun.	Oct. 14, 1929

MEMBERS—(*Continued*)

		Date of Membership.
MARAK, William Henry. Asst. City Engr., City Hall, Little Rock, Ark.	Jun. Assoc. M.	June 6, 1927 Nov. 11, 1929
MARRA, James Vincent. Rodman, Board of Water Supply, City Aqueduct Dept., 32-14 Broadway, Astoria (Res., 339 East 55th St., New York), N. Y.	Jun.	Oct. 14, 1929
MARTIN, Lloyd Littell. Erection Engr., McClintic-Marshall Co., Oliver Bldg., Pittsburgh, Pa.	Jun. Assoc. M.	June 8, 1918 Nov. 11, 1929
MARTYN, Henry James. Pres., Martyn Brothers, Inc., 911 Camp St., Dallas, Tex.	Affiliate	Nov. 11, 1929
MAXWELL, Donald Hebard. (Alvord, Burdick & Howson), 1417 Hartford Bldg., Chicago, Ill.	Jun. Assoc. M. M.	April 5, 1910 April 18, 1916 Nov. 11, 1929
MEAD, Emerson McCleery. Care, Am. Appraisal Co., Milwaukee, Wis.	Jun.	Oct. 14, 1929
MILINOWSKI, Arthur Siegfried. Cons. Engr. (Druar & Milinowski), 500 Globe Bldg., St. Paul, Minn.	M.	June 10, 1929
MILLER, Arthur Webster. 411 Hummel Ave., Lemoyne (Res., 165 New Jersey Ave., Wilson P. O., Clairton), Pa.	Jun.	Oct. 14, 1929
MINER, Charles John. With Clinton Constr. Co. (Res., 689 Nineteenth Ave.), San Francisco, Calif.	Jun.	Nov. 11, 1929
MOEHLE, Frederick Louis William. Structural Engr., W. S. Austin, 800 Maryland Trust Bldg. (Res., 2325 Harlem Ave.), Baltimore, Md.	Jun. Assoc. M.	Oct. 21, 1924 Nov. 11, 1929
MONEY, Clarence Alexander. Chf. Engr., John S. Metcalf Co., 111 West Jackson Boulevard, Room 819, Chicago, Ill.	M.	Nov. 11, 1929
MOORE, Bernard Allen. Care, Am. Bridge Co., Gary, Ind.	Jun.	Oct. 14, 1929
MURPHY, Glenn. Louisville, Colo.	Jun.	Oct. 14, 1929
MURRELL, John William. Res. Engr. of Sewers, State Hydr. Engr.'s Dept., Box 409, Adelaide, South Australia.	Jun. Assoc. M.	April 18, 1927 June 10, 1929
NASH, Charles Woods. 331 Worcester Bldg., Portland, Ore.	Jun. Assoc. M.	Aug. 4, 1924 Oct. 14, 1929
NAYLOR, Arch Waugh. Chf. Constr. Engr., Cia. Constructora Latino-Americana, S. A., Apartado 174, Tampico, Tamps, Mexico.	M.	Nov. 11, 1929
NOFERI, Louis Ernest. 171 Sullivan St., New York, N. Y.	Jun.	Oct. 14, 1929
NYLAND, Fritz Carel. Lt.-Commander, C. E. C., U. S. N.; Office, Engr. in Chf., Port-au-Prince, Haiti, Care, Postmaster, New York, N. Y.	M.	Nov. 11, 1929
OSTERBLOM, Carl Eskil. With Voorhees, Gmelin & Walker, New York (Res., 162 Hicks St., Brooklyn), N. Y.	Assoc. M.	Nov. 11, 1929
OWENS, Terrence Joseph. 1506 East 8th Ave., Denver, Colo.	Jun.	Oct. 14, 1929
PAIGE, Clayton Whitney. Asst. Engr. with Harold G. Ferguson (Res., 5162 Melrose Ave.), Los Angeles, Calif.	Assoc. M.	Nov. 11, 1929
PATTERSON, Donald. 1211 Twenty-second St., Des Moines, Iowa.	Jun. Assoc. M.	May 28, 1923 Oct. 14, 1929
PECKWORTH, Ralph Harris. Gallatin Hall D-12, Soldier's Field, Boston, Mass.	Jun.	Nov. 11, 1929
PINSON, Samuel Augustus. Box 75, Forney, Tex.	Assoc. M.	Nov. 11, 1929
POTTER, William Dayton. Asst. Engr., Eng. Dept., City of Los Angeles, Los Angeles (Res., 935 Venezia Ave., Venice), Calif.	Assoc. M.	May 13, 1929
PRICE, Donald Douglas. Dist. Engr., Portland Cement Assoc., 321 Terminal Bldg., Lincoln, Nebr.	M.	Nov. 11, 1929
REED, George Letchworth. Regional Structural Engr., Portland Cement Assoc., 1101 Hurt Bldg., Atlanta, Ga.	Assoc. M.	Nov. 11, 1929
RICHART, Frank Erwin. Research Associate Prof., Theoretical and Applied Mechanics, Univ. of Illinois, Materials Testing Laboratory, Univ. of Illinois, Urbana, Ill.	Assoc. M. M.	Sept. 12, 1921 Nov. 11, 1929
SALMEN, Clifford Ross. Junior Highway Engr., U. S. Bureau of Public Roads, Box 403, Rockdale, Tex.	Jun.	Nov. 11, 1929
SAMUEL, Alfred Frederick, Jr. Field Engr., McClintic-Marshall Co., Hudson River Bridge, 178th St. and Hudson River, New York, N. Y. (Res., 1412 South 24th St., Philadelphia, Pa.)	Jun. Assoc. M.	April 20, 1925 Nov. 11, 1929
SASSO, John. 181 Lincoln Rd., Brooklyn, N. Y.	Jun.	Nov. 11, 1929
SETTERLIN, Ralph Frederick. 1736 G St., N. W., Washington, D. C.	Jun.	Oct. 14, 1929
SHAH, Tao Kang Lincoln. With Whitman, Requardt & Smith, Baltimore, Md. (Res., 2012 Wyoming Ave., N. W., Washington, D. C.)	Jun.	Nov. 11, 1929
SILITCH, Eugene Wladimir. With Frederick Snare Corporation, 114 Liberty St. (Res., 440 West 34th St., Apartment 8-d), New York, N. Y.	Assoc. M.	Aug. 26, 1929
SILVERMAN, Max. Box 145, Bethlehem, Pa.	Assoc. M.	Nov. 11, 1929
SILVESTRI, Joseph Paul. 453 Green St., San Francisco, Calif.	Jun.	Nov. 11, 1929
SJOBERG, Clinton Peter. Civ. Engr.-Surv., 5 Marlboro Pl., Bellmore, N. Y.	Assoc. M.	Nov. 11, 1929
SLOVER, John Sutphen. San. Engr., Eng. Dept., City of San Clemente, San Clemente (Res., 4430 Tenth Ave., Los Angeles, Calif.	Assoc. M.	Nov. 11, 1929

MEMBERS—(*Continued*)

		Date of Membership.
SMITH, Albert Herman. Field Engr. and Constr. Insp., Atlantic Refining Co. (Res., 402 Walter St.), Philadelphia, Pa.	Assoc. M.	Nov. 11, 1929
SMITH, Oscar Samuel. Y. M. C. A., Middletown, Ohio.	Jun.	Nov. 11, 1929
SNYDER, Lester Miles. 1071 Page St., San Francisco, Calif.	Jun.	Oct. 14, 1929
SPENCER, Frederick Burr. Secy.-Treas., The Spencer, White & Prentice Co. (Res., 1517 Edison Ave.), Detroit, Mich.	M.	Nov. 11, 1929
SPOERL, Henry George. 4921 Gladys Ave., Chicago, Ill.	Jun.	Oct. 14, 1929
SPOFFORD, Foster Rawson. Draftsman, B. & M. R. R., Gen. Offices, Boston (Res., Highland Rd., Berlin), Mass.	Jun.	June 10, 1929
STANSBERRY, Elmer Frederick. City Engr.'s Office, 701 U. B. Annex Bldg. (Res., 354 South Jersey St.), Dayton, Ohio.	Jun.	June 10, 1929
STARKWEATHER, Walter Hallett. Engr. of Surveys, City Engr.'s Office, Dept. of Public Works (Res., 11645 Pinehurst Ave.), Detroit, Mich.	Assoc. M.	Aug. 26, 1929
STEINMAN, John Joseph. Draftsman, State Dept. of Public Works, Div. of Highways, 1190 Monterey St., San Luis Obispo, Calif.	Jun.	Nov. 11, 1929
STOVER, Harvey Dale. Designing Engr., Bridge Dept., State Highway Comm. (Res., 2945 Twenty-seventh St.), Sacramento, Calif.	Assoc. M.	Nov. 11, 1929
STREICHER, William Harold. 604 Spruce Ave., Niagara Falls, N. Y.	Jun.	Nov. 11, 1929
STUPKA, Peter James. Maintenance Superv., Bureau of Traffic Planning, City of Pittsburgh (Res., 122 South Whitfield St.), Pittsburgh, Pa.	Jun.	Nov. 11, 1929
SULLIVAN, George Leonard. Cons. Engr.; Dean, Coll. of Eng., Univ. of Santa Clara (Res., 725 Madison St.), Santa Clara, Calif.	M.	Nov. 11, 1929
TERRILL, Maurice Wilbur. Student Engr., Ingersoll-Rand Co., Phillipsburg, N. J.	Jun.	Oct. 14, 1929
THOMAS, Wallace Andrews. Civ. Engr., St. Louis Water Dept. (Res., 7350 Amherst Ave.), St. Louis, Mo.	Jun.	Nov. 11, 1929
THOREN, Roy Joyce Vincent. 4156 Seventieth St., Woodside, N. Y.	Jun.	Oct. 14, 1929
TRENHOLM, John Bohun. Engr., M. of W., 1st Div., A. C. L. R. R., Rocky Mount, N. C.	M.	Nov. 11, 1929
TURNER, Francis Cutler. 713 East Powell St., Fort Worth, Tex.	Jun.	Nov. 11, 1929
TUTAN, George Washington. Gen. Supt., Davis Constr. Co. (Res., 925 Euclid Ave., N. E.), Atlanta, Ga.	Assoc. M.	Nov. 11, 1929
VAN DEN BERG, Cornelius, Jr. Pres., Alabama Water Service Co., Birmingham, Ala.	Jun. Assoc. M.	Feb. 25, 1924 Nov. 11, 1929
VAN HOOK, Elliott Boyd. Engr., Truscon Steel Co., 1505 Race St. (Res., 217 South 47th St.), Philadelphia, Pa.	Jun. Assoc. M.	Dec. 4, 1922 Nov. 11, 1929
VAN NESS, Russell Alger. Bridge Engr. System, A. T. & S. F. Ry., 1237 Railway Exchange Bldg., Chicago, Ill.	Jun. Assoc. M. M.	Dec. 6, 1915 Mar. 7, 1921 Nov. 11, 1929
WANNER, Edwin Frederick. 5549 Black St., Pittsburgh, Pa.	Jun.	Oct. 14, 1929
WANZER, Charles Tice. Div. Engr., Duke Power Co., Charlotte, N. C.	M.	Nov. 11, 1929
WEISS, Ernest Andrew. With The Cleveland Union Terminals Co. (Res., 10013 Madison Ave.), Cleveland, Ohio.	Assoc. M.	Nov. 11, 1929
WELCH, Orlando A. 1140 Pearl St., Denver, Colo.	Jun.	Oct. 14, 1929
WHEELER, Darwin Frederick. Cooperstown, N. Y.	Jun.	Oct. 14, 1929
WILCOX, Halsted Newell. Steel Insp., B. & O. Chicago Terminal R. R. (Res., 1608 Sherwin Ave.), Chicago, Ill.	Jun.	Oct. 14, 1929
WILDER, Robert Marquis. Executive Supt., Seaboard & Southern Constr. Co., Jacksonville, Fla.	Jun. Assoc. M.	April 12, 1926 Nov. 11, 1929
WILEY, Robert Dexter. 560 North 12th St., East St. Louis, Ill.	Jun.	Oct. 14, 1929
WILKERSON, William Wadsworth. Mgr., Paving Dept., Hasie Eng. Co. (Res., 3517 Normandy St.), Dallas, Tex.	Assoc. M.	Nov. 11, 1929
WOLFF, William Robert. 332 Rahway Ave., Elizabeth, N. J.	Jun.	Nov. 11, 1929
WOODBURN, Russell. Care, Erie Baggage Agt., Wellsville, N. Y.	Jun.	Oct. 14, 1929
WOOTEN, Marion Frank, Jr. Associate San. Engr., State Dept. of Public Health, Room 20, Memorial Bldg., Nashville, Tenn.	Jun.	Oct. 14, 1929
WORSHAM, Ludson Dixon. Maj., Corps of Engrs., U. S. A.; Asst. to Dist. Engr., U. S. Engr. Office, 807 McCall Bldg., Memphis, Tenn.	M.	Nov. 11, 1929
YAEGER, Erwin Albert. 1602 West 4th St., Wilmington, Del.	Jun.	Oct. 14, 1929
ZIMMERMAN, Thomas Moore, Jr. 529 Commercial Trust Bldg., Philadelphia, Pa.	Jun.	April 15, 1929

Reinstatements

MEMBERS	Date of Reinstatement.
AUSTIN, Frank Willis.	Nov. 27, 1929
ASSOCIATE MEMBERS	
TALBOT, Frank DeWitt.	Nov. 6, 1929

Resignations

Members	Date of Resignation.
JONES, Henry Harrison	Nov. 13, 1929
ROSS, Thomas Alexander	Nov. 30, 1929
Associate Members	
DORAN, Walter Edmund	Nov. 22, 1929

Deaths

BARKER, Bertrand Don. Elected Associate Member, September 3, 1913; died November 8, 1929.
BRACKENRIDGE, William Algernon. Elected Member, June 2, 1886; died November 29. 1929.
DELERY, Eugene Frank. Elected Associate Member, May 7, 1913; Member, March 16, 1925; died December 1, 1929.
DIMOCK, Arthur Herbert. Elected Member, May 31, 1910; died November 16, 1929.
HALL, Benjamin Mortimer. Elected Member, February 6, 1901; died November 19, 1929.
KREUTZER, George Charles. Elected Member, January 16, 1928; died November 23, 1929.
LIEB, John William. Elected Member, October 5, 1898; died November 1, 1929.
PRUETT, Grover Cleveland. Elected Junior, March 2, 1909; Associate Member, February 6. 1912; Member, October 10, 1916; died July 4, 1929.
REYNOLDS, Charles Henry. Elected Associate Member, November 25, 1919; died November 1, 1929.
SCHWARTZ, Lloyd. Elected Associate Member, March 12, 1918; Member, March 15, 1926; died November 7, 1929.
THOMAS, David Ogle. Elected Associate Member, October 10, 1916; died November, 1929.
WHITE, Timothy Sidney. Elected Member, April 3, 1889; date of death unknown.

Total Membership of the Society, December 3, 1929

Members	**5 651**	
Associate Members	**6 027**	
Corporate Members		**11 678**
Honorary Members		**18**
Juniors		**2 244**
Affiliates		**143**
Fellows		**7**
Total		**14 090**